THE CULTIVATOR.

THIRD — To Improve the Soil and the Mind. — SERIES

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Manuring Grass Lands.

In no department of farming is there a more radical call for improvement, than in the management of our meadows and pastures. Good grass crops are at the very foundation of good husbandry. Land which will produce these largely, will produce grain, corn, and roots,—will sustain a good proportion of stock, and thus furnish within itself, the means of keeping up and improving its fertility. These assertions are seemingly so self-evident, that we must beg pardon of the intelligent reader for referring so frequently to the subject. And yet the intelligent reader who looks, perhaps, over his own farm, certainly on the farms around him, will see that no word is out of place, which can attract attention to the question before us. We shall now remark simply on top-dressing meadows—the present being a favorable season for the operation.

For improving the yield of grass, and adding to the permanent fertility of the soil, we cannot do better with our fine manure, than to apply it after haying as a top-dressing to dry land meadows or pastures. It will give new vigor to the growth of grass, and increase the thickness of the sward, so that even were it to be plowed the next season for a grain crop, the manure could not be better timed or applied. For meadow or pasture the product would be largely increased both in quantity and quality. On wet land, draining should precede the application of manure, as no great benefit can be gained from manuring a soil saturated with water during the wet seasons of the year.

On loamy soils, the different composts of muck with manure, ashes, lime, guano, etc., will be found valuable, and an addition of plaster to the compost cannot well come amiss. For mucky soils, manure composted with loam or clay will be appropriate, and these alone—as is the case with muck on upland—will be found a valuable means of improvement. Bone manure, when it can be procured, is an extremely valuable fertilizer for grass, and no farmer should neglect to employ in a broken state, all the bones within his reach upon the farm.

We have seen an account of an experiment where dry straw spread thinly over the surface of a meadow, after haying, produced a large increase in grass—acting, perhaps, as a sort of mulch to the roots, preventing the effects of drouth, adding also a light manuring as it decayed. Turf ashes act very beneficially upon grass land, and some farmers use them largely as a top-dressing for meadows.

Clover and Gypsum.

Clover was first cultivated, we believe, among the Dutch and Flemish farmers, and formed one of the causes for the superiority of the husbandry of the Netherlands over that of the countries around it. From thence, in the sixteenth century, it was introduced into Great Britain, where it has been instrumental in converting some of the most barren and worthless soils into the most fertile and profitable. Clover and Gypsum, or plaster of Paris, were brought into the United States about 1770, from Germany, where the benefits resulting from the application of the latter in the growth of the former had been discovered by accident. And often thus are facts of importance discovered—principles, the practical application of which exerts an immeasurable influence on the prosperity of a country, and of the whole civilized world.

That the use of plaster in promoting the growth of clover, and the introduction of the latter into the course of rotation with grain crops, has added much to the productiveness and value of our farms, no one will be disposed to doubt or deny. Nor will they refuse to give credit to the public spirit of such intelligent and influential men as Judge Peters, Chancellor Livingston and others, who were instrumental, both by precept and example, in its early introduction into Pennsylvania and New York.

In restoring worn out soils to fertility, clover and gypsum fill an important part in the management and economy of the intelligent farmer. Clover is a profitable pasture and hay crop, and with the aid of plaster, easily grown on most soils, while its growth acts as an improver of the soil, equal in effect, in many instances,

to a dressing of stable manure. Like other leguminous plants, it seems to make but slight demands upon the constituents of fertility in the surface soil—drawing largely upon the atmosphere and upon the depth of the soil for its support. Its roots are large and numerous, and its stalks extensive, with abundant foliage, supplying a large bulk of vegetable matter, both for forage and for ameliorating the condition of the land. A luxuriant growth of clover is an excellent preparation for any and every crop. The soil is deeply and finely loosened by its roots, which bring to their support and to the surface the valuable salts in the subsoil, not otherwise brought into service. This length and vigor of root, shows us why clover delights in deep strong soils, and why, when the subsoil plow has opened its easy way, such abundant crops are sure to follow.

Though plaster is of the highest value to the farmer, its effect in the production of clover cannot be relied upon, if applied alone for a series of years. Thus alternate crops of clover and wheat, finally so exhaust the soil, that clover will not grow, and hence can no more be relied upon to furnish new supplies of fertility for the grain crop; but judiciously applied, with occasional dressings of barn-yard manure, and a rotation, including a greater diversity of crops, its value will continue to be seen, on all soils not already well supplied with its mineral constituents. Of these and of its practical uses, we shall speak hereafter.

Late Planted Corn—"Do Your Part."

In many sections a considerable part of the corn crop was planted rather later than usual—or was replanted late, after the frosts of June 4th and 10th, which really or apparently destroyed many handsomely growing corn fields. The drouth prevailing since that time until recently, has kept the crop backward, but recent favorable weather again gives it a vigorous push, and we have now an excellent prospect for a corn crop. To make it good, we have only to "do our part"—in the way of clean culture—as illustrated by the following anecdote.

In 1855, a farmer in Ohio, as he tells the story in the *Ohio Cultivator*, had thirty-five acres almost entirely destroyed by cut worms. He planted and replanted until he almost despaired. Seeing his despondency, a Quaker neighbor told him, "Thee will get corn yet; do thy part, and if thee don't raise enough for thy use, come next fall and I will give thee all thee needs, *but thee must do thy part*." He accordingly went to work in good earnest—plowed, hoed, and kept his fields in good order, and the result was, that both cribs could not begin to hold his corn in the fall One field, replanted on the 16th of June, yielded good sound corn. Such is often the result. A great deal depends on the care which a crop receives from the farmer.

It is never too late or too early to work among corn, when there are weeds to destroy, or a hard crusted soil to make mellow. Of course there is a best time for these things—and the best time for destroying weeds is as soon as they fairly appear above ground. While the roots are small and tender, they are easily killed and effectually put out of the way. A large weed, on the contrary, may be hoed up, and torn from the soil, but its roots are full of life, and again take hold and grow, especially if damp weather follows. Besides the labor of cutting up one large weed is adequate to the destruction of all the small ones one stroke of the hoe can reach—and a well directed stroke will reach hundreds. But large weeds can be destroyed. They must be destroyed, if we would "do our part" toward getting a good crop. In many fields there are comparatively few weeds—these few should not be allowed to go to seed, and thus stock the soil for future harvests of toil and worthlessness. If we *do our part*, we shall save ourselves a great deal of trouble in the future, as well secure a fair reward in the increase of the present product.

As to mellowing the crusted soil—if the ground was properly prepared, this will now scarcely be necessary. Until the crop is large enough to shade the ground pretty well, the cultivator will be less injury to the roots of the corn, than its operation will balance in benefit. We have seen the suggestion to cultivate alternate rows, so as to leave the roots on one side of each row uninjured, taking the other row a few days afterwards, when the disturbed roots had again become established. New England farmers are using a new subsoil plow, working below the depth of the plowed soil, and disturbing the roots but slightly. But we must conclude, with the remark that every farmer can see for himself what more he can do to perfect *his part* of the business.

Mr. Webb's Ram-Letting.

Mr. JONAS WEBB's annual South-Down Ram-Letting at Babraham, has become one of the institutions of England, the *thirty third* having been held on the 7th of July—a full report of the doings at which we find in the Mark-Lane Express. Fifty-four rams were let—three 4-years old, whose fleeces averaged 9 lbs. 5 oz.—fourteen 3-years old; average of fleece 8 lbs. 10 oz—fourteen 2-years old; average fleece, 8 lbs. 10 oz.—twenty-three yearlings; average fleece, 8 lbs. The company present was large, and the competition brisk, the total lettings amounting to $6,880, or $120.74 per head, which was an average of about $22 per head over that of last year.

At the conclusion of the business, the guests and visitors, to the number of about 200, sat down to a dinner prepared for the occasion, at which Major PEMBERTON presided as chairman. From the report of the doings at the table, in the Mark-Lane Express, we select the following:

Mr. WEBB gave, "The healths of our friends across the Atlantic," coupling with the toast the name of Mr. L. H. TUCKER, on the staff of one of the agricultural journals of the United States. Mr. WEBB added that he had received an order to send a ram to the United States at 150 guineas.

Mr. TUCKER said, in two respects Old England—for they were still fond of calling her Old England across the water—was so famous, viz., for her hospitality and for her agriculture, that while he was sure that neither could excel the other, he was equally sure that it would be difficult to find elsewhere an example of both similar to that which had been witnessed during the day. And when he saw so many gentlemen connected with the pursuit of agriculture, not as a recreation or as a means of spending money, but with something of that energy which had placed British commerce and British manufactures in their present proud pre-eminence, he could not but appreciate the solid basis on which English institutions stood, and the services which had been performed for agriculture by such gentlemen as Mr. WEBB. American traders and merchants, when they wished to

secure the best, had recourse to the achievements of British genius and the excellence of British products; and American farmers acted on the same principle. The prodigies which had been performed in the improvement of the sheep and swine, and the creation of such a breed as Shorthorns in cattle, were no less triumphs of genius; and for whatever excellence Americans could boast in their show-yards, for that kind of animals capable of producing the most beef, mutton, and pork, at the least expense of time and food, he most willingly and cordially acknowledged their indebtedness to English breeders, among whom he was most happy to find himself that day, and many of whose names were known all the way from France to Australia, as well as on the banks of the Hudson river where he lived, and the still more distant and almost boundless prairies of the Western States. He might conclude by expressing the pleasure with which he had observed that Mr. COBDEN—who had just returned from a journey in America, and whom he had the pleasure of meeting there last spring—in his first speech after landing at Liverpool gave the fullest assurances derived from his own personal observation and knowledge, that the people of America still looked back to England—although perhaps as a grown-up and somewhat wayward boy might look back to the home of his fathers—with the deepest sympathy in all the progress she could make, with the utmost confidence in the good-will of her inhabitants, and with the proudest anticipations for her future no less than for their own.

Letter from John Johnston.

NEAR GENEVA, 27th July, 1859.

MESSRS. EDITORS—Since my last, the weather has been remarkable for the season—thermometer seldom above 70 at 2 P. M.; at 6 P. M. last evening it was 60—this morning, 58. Ever since 22d of last Nov., when we had our heaviest fall of snow, (until 23d April,) we have had remarkable changes in the weather. I have kept a partial jotting of the weather for a number of years, and I can find no such weather as we have had since 22d Nov. What says our weather friend, Mr. MERRIAM of New-York city?

I have a letter from Huron Co., Ohio, of 20th inst. The writer says, "we have had some excessive hot weather—thermometer from 96 to 102 in the shade. The drouth also excessive; corn and pastures all dried up. As to hay, we have none. The sheep and cattle must live on straw and what corn-stalks we may have, for all of next winter. What wheat we had was good, but the frost took by far the greater part of it; what is left is of fine quality. The frost was also the ruin of our hay crop."

Our hay in Seneca county, is light; still on good land, that is manured land, it is a fair crop. My timothy meadows will yield about or nearly two tons to the acre. On Mr. SWAN'S farm, we tried two acres of a 40 acre field, that was well manured with cattle and sheep manure before the last wheat crop, (no manures of commerce were used,) which gave on the two acres five and three-quarter tons of thoroughly dried hay, and it was not better than the average of the field. This shows what manure does. *With manure we can have a plenty of everything.* I know it is said that I force my farm by manure, else I would not get such crops; but I make the manure; all I ever bought was half a ton of ground bones something like eighteen years ago—latterly four tons of guano and one ton of Taefew, but I found these would not pay. I can have better manure in my cattle and sheep yards for nothing, by feeding plentifully of oil-cake, meal and grain, and this I think is a far more sensible way of manuring land, than importing it from the tropics, or having it manufactured in New-Jersey. JOHN JOHNSTON.

P. S.—At 6 A. M., thermometer 58—at 10, 55°.

The Cherry Currant.

This is the largest of all the red currants, frequently measuring five-eighths of an inch in diameter, and ordinary crops from half an inch to a little less. It was formerly supposed to be a moderate bearer, but is now found to be productive. The following is the amount of a crop which we gathered this year. The number of bushes was twenty-four—they were set out in 1857, when very small, and this is their third summer. As it was intended to remove a part of these ultimately, they were placed temporarily quite thick, or the twenty-four in a row thirty feet long. The fruit this year hung in dense masses, and the row yielded a full bushel by measure. They were planted in common unmanured garden soil, and kept cultivated. An acre, like these, in rows four feet apart, would have given over three hundred bushels.

Farmers, plant out a good supply of small fruits, which give such large, certain and speedy returns—not forgetting strawberries, which, with good care and good sorts, will give at least one hundred bushels per acre the second year. Rochelle and Dorchester Blackberries, which will do about the same the third year—and Houghton's Gooseberry, which will exceed this amount the fourth year and afterwards.

But remember to give them good cultivation.

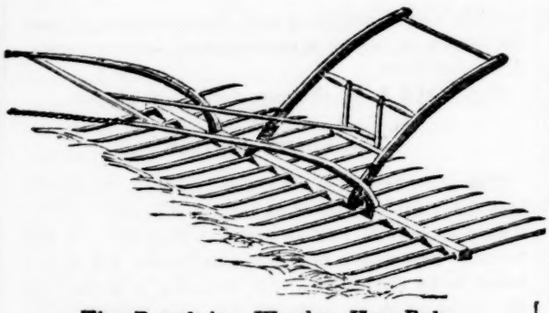
Strawberries.

MESSRS. LUTHER TUCKER & SON—As we are ambitious of raising fine Strawberries, and having what we imagine to be good plants, some of them bearing berries (4½ inches in diameter) without any attention being paid them, I am led to inquire of you the particulars as to how we shall proceed. When must we transplant? And must we leave runners? And do they need manure on a rather sandy soil? How long can they live and bear well? F. B. EVANS. *Commack.*

First, procure the *best sorts*—among which, of the larger varieties, are Hooker and Wilson—and McAvoy's Superior for the southwest Hovey's seedling sometimes succeed finely. These and the Triomphe de Gand, (which we have measured two inches in diameter the longest way,) are the largest. The Wilson, Hooker and Triomphe de Gand must be cultivated in "hills," with the runners not covering the whole bed.

Spring is the best time to transplant—next, about or soon after midsummer, just after bearing, and while the plants are yet partly dormant from bearing. Set in autumn, the young plants do not always become sufficiently rooted to endure winter without injury. When transplanted in summer, cut off all the large or fully expanded leaves, leaving only the new half grown ones—dip the roots in mud—settle the earth about the roots by watering—cover them with mellow earth, and mulch an inch or two deep with stable manure free from straw. This treatment will be attended with success, and the plants will bear well next year.

Beds well hoed will last two or three years, or more—if the runners are allowed to cover the whole surface, they should be renewed every second year, by spading under alternate strips of the strawberries, the runners renewing these strips.



The Revolving Wooden Hay Rake

Will you please publish for the benefit of your foreign readers, a cut of this implement, with as complete a description as possible? Many I am convinced, would be glad to avail themselves of it, if you would give the particulars necessary for its construction. T. *Lincolnshire, England, July* 28.

The revolving horse-rake, as commonly constructed, is represented by the above cut. When in use, the teeth lie flat upon the ground, passing under and collecting the hay. When filled, a slight motion of the hand causes a semi-revolution of the rake, and the load is discharged; and the opposite row of teeth by this movement is brought into use, to be filled and discharged as before. The horse is attached to the draught frame seen on the left, a portion of one of the draught ropes being visible in the cut; and the rake is held by the frame which serves as a handle on the right. The teeth are held firmly and flat on the ground, by the pressure of the small square frame, turning slightly on the middle rod of the handles; but when the semi-revolution is to be made, the handles are slightly raised, and this frame which only presses the points of the teeth, is thrown upward a few inches so as to clear the points of the teeth, and the horses still advancing, causes the rake to revolve half a circle. Both the handles and draught-frame are attached to the body of the rake by iron straps passing around it, and by which it is allowed to revolve freely.

The best rakes are now made, not with *curved* pieces for the draught-frame, as shown in the cut, but with these pieces made by mortising two portions together in the form of an elbow. Under these the hay accumulates, and more room is allowed when thus constructed, than if the pieces are merely curved

The rake head is made three inches square, and ten feet long, of the best and toughest timber; the teeth are about 8 or 9 inches apart, 22 inches long besides the part inserted into the head, and an inch and a fourth by two and a half at the head, tapering to the points. The cost of construction is about six dollars.

As the horse moves onward without stopping, one man and a horse with this rake, will easily collect into winrows more than two acres of hay per hour, which on good meadows would not be less than forty tons for an entire day, being about four cents a ton for raking. The rapidity with which hay may be secured from approaching rain, is a most important advantage which this rake possesses.

☞ We learn that Mr. JOHN BANKS, of Bainbridge, N. Y., has sold his fine Devon bull "Metropolitan," recently advertised in this paper, to Mr. JOSEPH COOPER of Lackland, O., who, we are informed, has a very superior herd of Devons.

Seasonable Improvements—Clearing Swamp Holes.

As recently stated, the leisure period between the early and later harvest, in a part of August and September, affords the farmer an opportunity to accomplish improvements which cannot be effected as easily and well at any other season; and the clearing and draining of bogs and marshes is among those of superior importance. We have already given several articles on this subject—but the vast amount of waste land yet to be reclaimed, and the great profit arising from bringing it into fitness for cultivation, warrant repeated presentations of the question to our readers.

The wettest bogs and marshes generally contain the least water at this season, and hence allow to a greater extent, the cutting of drains and the clearing off of bushes than at any other period. The water once removed, and the drains so constructed as to carry readily away all surplus moisture, we have land of superior quality and productiveness, especially for oats and grass, and for some root crops in favorable seasons. Instead of "plague-spots" disfiguring the surface of the farms, producing only worthless plants and disgusting reptiles, and filling the atmosphere with malaria, we have handsome fields, producing luxuriant crops, and smiling with plenty—repaying at once a considerable expense of reclamation. We have so recently spoken of methods of clearing, etc., that we will now only touch upon another branch of the subject.

Muck or peat bogs, which have been drained, usually produce well for a time, and then seem to "run out"—wild grasses taking the place of those first sown upon the soil. This is usually caused by their settling as the land becomes dry—becoming more compact, and finding a level so much lower as to make the drains partially useless. Or the drains may become filled up, with the same result. Or it may be that the surface soil, above the water line, becomes exhausted and needs renewal There is something in the nature of muck or peat, which renders exposure to the sun and air necessary before it will produce the tame grasses (or cultivated crops of most kinds) to perfection—before it loses this tendency to run them out. It needs plowing up every five or six years, so that the muck may be further aerated and decomposed—its sourness passing off in the process—and if then re-seeded and re-manured, will become as productive as before.

The present is a favorable time for clearing and deepening and clearing the drains, and plowing up such old meadows—which may then lie until another spring, and then be seeded lightly with oats and heavily with grass seed; and if during the winter, an inch or so of loamy soil were added, the improvement would be more permanent and effectual.

NATURAL HISTORY.—We learn from the Prairie Farmer, that at the coming fair of the Illinois State Agricultural Society, at Freeport, there is to be exhibited specimens of natural history of the state, including collections of the minerals, plants, birds, shells, insects, &c. A suitable museum building has been erected by the society, and it is believed this will be an attractive and important feature of the annual show.

MILKING IN SILENCE.—At the Farmers' Club at West-Cornwall, Connecticut, one of the members observed that no talking should be allowed while milking was going on. Another said he had discharged a man because he would talk and interrupt the milking in his dairy, and in three days the increase of milk was equal to the man's wages.

Cultivation of Wheat—Requisites to Success.

The very general success of the wheat crop of the present and last season, so far as the ravages of the midge were concerned, will doubtless lead to more extensive resumption of its culture, and we hope with continued good result. Yet we cannot but fear that looking at the favorable crops of this and last year, other and important considerations will be lost sight of, and hence disappointment in many instances follow. Let us recall some of the requisites to successful wheat-growing at the present time.

1. We must sow an early and hardy variety—like the Mediterranean, or the Golden Drop, and some recently introduced varieties from the South and West—the Dayton, the Kentucky May, the Rugg and Boughton wheats, and several other promising varieties. The old red wheats are improving in quality and yield under better culture, but if we can secure any advantage by seed from other sections, as no doubt we can, it is well to introduce and test them. Wheat ripening earlier than our former favorite varieties is requisite to evade the midge—though this year, we believe, the Soules' wheat has escaped its ravages in some instances. All kinds of wheat headed out much earlier than usual the present year, allowing the chaff to harden before the appearance of the midge, but ripened slowly, and but little in advance of the usual time—a circumstance which may not occur again in many years. We much fear that *we cannot take the present season as our guide for future operations in wheat growing.*

2. Early sowing is requisite—that the plants may ripen early, as they will if they get a fair autumn growth, enabling them to withstand the rigor of winter, and enter the spring prepared for tillering so as to fill the ground. Some would sow as soon as the last week in August, but with an early ripening variety we should prefer from the 10th to the 15th of September, as security against the ravages of the Hessian fly.

3. Good culture is requisite to successful wheat growing. On heavy soils there is no better preparation than a thoroughly worked summer fallow. It should be mellow and moist, though if rough and cloddy, it is none the worse. If sown after other crops, one good plowing only is necessary; then, unless the land is very rich, give a light dressing of well rotted manure, cultivate or gang-plow to mix it with the surface soil, and then sow on the seed. If the soil is inclined to be too light, harrow it thoroughly, which will assist in packing the soil, and leaves the surface in better condition for winter wheat than results from the use of the roller.

4. We may have the best varieties, sow them early upon a thoroughly prepared soil, and yet if that soil lacks drainage, our success is problematical. A practical writer on this subject says, (and we have said the same before:) "freedom from stagnant water is an indispensable condition of a good wheat soil. If cold, wet, and sour, a good crop of wheat cannot result." What is called a *warm, quick* soil, we repeat, is the most certain to secure a thrifty, perfect growth, and an abundant product.

On gravelly loams, fine wheat can be grown; still as heavy crops are not usually produced as on heavier soils which have been underdrained. Some proportion of clay suits the wheat crop, and often such land, well prepared and properly provided with surface drains, produces a better crop than the dryer upland.

These conditions must have their weight with every wheat-grower. We see farmers, however, who from the success of those around them, are now led to resume wheat growing, upon impoverished and ill-prepared soils, without manure—with little attention even to surface drainage; also sowing so late, that even in the most favorable days of wheat culture, winter-killing and rust would be the almost certain result. We would warn our readers that careful and adequate preparation is still an essential requisite—that early varieties, early sowing, a warm, dry soil, entirely free from stagnant water, and a good state of fertility, *with a favorable season*, can only be relied upon to secure a good wheat crop. We must not place too much dependance upon the hope of continued success.

Plowing Up Grain Stubbles.

The best management of a stubble field, which is not seeded to grass, but is intended for a plowed crop the next season, is a question of interest, and yet one we seldom see discussed in agricultural literature. Not only is the subject passed by without written remark, but the stubble fields themselves are equally neglected; are often allowed to perfect a crop of weeds, filling the soil with foul seeds, largely injuring the crops which follow, or rendering a large increase of labor necessary to the proper culture of the crop. A far better way would be to plow under this growth, as it would clean the land and benefit the soil, and some thorough farmers of our own and other countries, follow this practice.

This subject was brought to our notice by coming upon a communication by Mr. Hubbard of Hampshire county, Mass., to their Ag. Society, some years ago. He recommends a more thorough system—he would plow soon after harvest, and give a light seeding of rye, expecting, and in many trials receiving, the following benefits therefrom: The fall feed, which will pay for the seeding and plowing; a green crop to turn in as manure in the spring, equal to five or six loads per acre; autumn plowing, pulverizing the land, and saving more in fitting it for the crop, or in the first hoeing, than the expense of the work; the destruction of the seeds of noxious weeds turned under before they ripen; a deepening of the soil—the team being well rested from the spring's work, are able to turn a good furrow.

These remarks apply more particularly to light sandy soils—such as are most suitable to the growth of rye. Our heavy lands would often be too hard, in our dry seasons, for early autumn plowing; nor are they well suited to the production of rye or constant cropping. Late fall plowing would here be most beneficial, with special attention to surface drainage. But light lands, treated on the above system, would produce a heavier crop of corn, roots, or spring grain, with the same manure, than if allowed to remain an untilled stubble through the winter.

"Weeds in the Corn."—A western cotemporary speaks of a cornfield seeming to have been left by the owner to take care of itself. "The weeds have invaded the field, and the only good they are possibly doing, is that they act as a mulch to the plant, which would otherwise suffer from the dry weather." Rather questionable "good," the mulch of living weeds. We find the soil far dryer in the cornfield, where covered with weeds, than where cleanly cultivated, and believe such is always the case.

Seasonable Farm Improvements—Destroying Weeds.

The comparatively leisure season occurring after haying and the early harvest, and before that of the later crops, may be considered the most favorable period of the year for making some of the most important improvements of the farm. Not only are the usual farm labors less pressing than usual, but other circumstances, hereafter noted, render it a suitable time for destroying weeds in bye-places, or wherever found; for clearing swamp holes, and draining bogs and marshes; and last, but far from least, for getting out muck to increase the amount and value of the manure. We shall offer some hints on each of these topics, repeating, perhaps, suggestions before made in the CULTIVATOR and COUNTRY GENTLEMAN—but needing as much as ever, urging upon the attention of our readers.

Of the many farm improvements necessary to the beauty and the profit of the homestead, none are more important than the destruction of the weeds and bushes along the fences and roadsides; in pastures and cultivated fields—in short wherever they appear—so unsightly to the eye, so detrimental to the growth of valuable crops, and so certain to increase in extent and amount of injury. As formerly remarked, (Cult., Aug. 1850,) "thistles, docks, briers, &c., are often allowed to flourish unmolested in the bye-places of the farm. On the borders of the fields they occupy the richest of the soil, and annually extend their encroachments. They are not unfrequently seen in good lands, that are devoted to various crops, and in pastures are quite common—many farmers being apparently regardless of their presence or effects." A little thought will show how injurious the result of such products upon the prosperity of the farmer.

One means of their eradication would be to carry out the rule to the letter, "that no weeds be allowed to perfect their seed undisturbed." This will keep all annual and biennial plants from spreading, and as soon as the supply of seed in the soil is exhausted, will rid the farm of their presence. Many perennial plants can be materially checked in this way, and constant cutting will destroy the most persistent in vegetation. No plant can live without leaves—even Canada thistles soon perish under this treatment. Docks and mulleins may be destroyed by pulling after they have formed their stalks. Those that break off should be cut a few inches below ground, and they will not again shoot forth; the crown of the root only sending forth buds and fresh leaves. The yellow dock is a rapidly spreading plant, if allowed to seed, and too much pains cannot be taken to root them from the soil, both by digging and pulling. The presence of the burdock indicates a very rich soil, and such soil should be put to a better use than the production of this pernicious weed. To those who keep sheep, the destruction of this and all bur-bearing plants is especially important.

Briers and other bushes, if cut at this season, will be nearly destroyed. They have finished their new growth, and are now forming buds for another year. If cut closely, but few sprouts will start up, and these may be readily kept down by bruising with a stout stick, or pasturing with sheep—a few seasons of such treatment will root them out. If grass seed is sown where they are cut away, it will soon fill the ground and hinder their return, especially if the situation has allowed them to be burned upon the ground.

If the farmer who does no more, would simply make it a rule to mow the fence corners of his grain fields every year, and every pasture lot containing any injurious plant, he would soon make a marked improvement in the appearance of his farm. Nor should the roadsides and borders of wood-lands be neglected—these often afford crops which seed whole neighborhoods with pernicious plants, and entail many losses and vexations upon the farmer.

The Carbon of Plants.

The queries recently proposed on this question (Co. Gent., July 14, p. 29,) induces us to give in a condensed form, the remarks on this subject below. They are drawn from Stockhardt's *Chemical Field Lectures*—a work of great interest to the thinking farmer.

"Whence does the plant derive its carbon?" asks "J. B. C." The question is fully answered by our author. Plants absorb carbon in the form of carbonic acid—an unfailing constituent of common air and spring water, and formed in every soil that contains humus. Carbonic acid is a kind of air generated in extraordinary quantities by the three chemical processes every where going on, viz., respiration, combustion, and putrefaction. It is also evolved in fermentation, and, lastly, streams from the crevices of many regions of the earth of volcanic formation.

The carbonic acid generated by these different processes is all taken up into the air. If there were no compensating process, the air would gradually become changed and unfit for respiration; more especially as in breathing, combustion and decay, free oxygen, or vital air, is removed from it. But it is wisely arranged that the oxygen suffers no diminution, nor is there an increase of carbonic acid. The vegetable world is not only a supporter, but a protector of animal life. It provides the whole animal kingdom with nourishment, and restores again to the air the oxygen abstracted by the former. "For plants by their roots and leaves absorb carbonic acid as their most important article of nourishment, and by their green or herbaceous parts again exhale its oxygen during the light of day. On the other hand, they firmly retain the carbon of the carbonic acid, and appropriate it to the construction of their leaves, blossoms, and seeds, and the proximate constituents which these contain."

Wherever plants are produced, carbonic acid is generated in the soil. The plants, in their various parts, and the animal life feeding upon them, are *living*, and subject to death, corruption and decay—and thus their carbon again becomes carbonic acid. Vegetable mould, or *humus*, is the name given to such decomposed organic substances, and they are constantly altering in constitution, becoming more and more decomposed, and throw off fresh supplies of carbonic acid to the roots of plants as their nutriment. At the same time the azotized and mineral substances which humus contains become soluble—often by the aid of this carbonic acid—and capable of being received as food by plants in the same manner.

"Does the plant absorb *any* carbon from the soil," again asks "J. B. C." Let Prof. JOHNSTON answer. After a careful argument on this question, he says:

"We may consider it satisfactorily established, that while a plant sucks in by its leaves and roots much carbon in the form of carbonic acid, it derives a *variable*

portion of its immediate sustenance (of its carbon) from the soluble organic substances that are within reach of its roots. This fact is never doubted by the practical husbandman. It forms the basis of many of his daily and most important operations, while the results of these operations are further proofs of the fact."

The queries of our correspondent are important, but it seems to us that most of them have been freely discussed in our columns. It is a subject, however, on which we can scarcely hear too much, and we hope will call out those who have made original researches into the nature and action of manures.

Weeding Beans with Sheep.

The culture of beans is still pursued to a considerable extent, though less profitable than when the market ruled prices double the average of late years. Some farmers simplify their culture and reduce its expense by feeding down the weeds with sheep, instead of hoeing them—especially if grassy—turning them on as soon as they need hoeing, and watching carefully to turn off as soon as their work is finished. The sheep should not be very hungry when first turned in, or they will take grass, weeds, and beans together; they will not usually touch the latter while the supply of the former holds out. Whenthe beans get six or eight inches high, they should be cultivated, with the implement so arranged as to throw the dirt under the hill—this will be all that is usually necessary. If the weeds come up again, the sheep may be turned on for a few days, though the beans by this time are generally large enough to cover the ground and keep down all injurious vegetation.

Transplanting Fruit Trees.

MESSRS. EDITORS—Can you or any readers of the CULTIVATOR, inform me the most suitable time to set fruit trees, such as apples, &c., as some say the fall is the most suitable, and others the spring—so, as I am not experienced, I write for information. Also the manner of setting them, and how the ground should be tilled, and the crops that should be raised on the land while the trees are small and tender. T. R. W. *Newport, Me.*

Autumn and spring each have their peculiar advantages for setting out fruit trees. The advantages of autumn transplanting are, the soil becomes well settled about the roots, and the trees are prepared to make an early start in the spring. The disadvantages are that trees are always made more tender by removal for the endurance of the first winter; and the soil hardens on the top into a crust, and the trees will not then grow so well as when the soil has been lately stirred in setting out, as in spring Hence, tender trees in severe climates should not be transplanted in fall, unless they can be protected by a shelter from the winds or by a screen of evergreens, and unless the ground is dry and well drained, naturally or artificially, so as to avoid the injurious results of freezing about the roots. Hence, also, that numerous class of cultivators who never cultivate their young trees at all, should always set in spring, for in doing so the trees will be more apt to have a mellow soil about them, during the early part of the season, than if the soil has become hardened by setting all winter.

Unless the locality exposes them much to cold wintery winds, and to late fall rains, which cannot drain off, we prefer setting so hardy a tree as the apple in autumn—intending, of course, to keep the soil mellow by cultivation the following summer. Far more depends on good after culture, than on any time or mode of setting out. Ten times as many trees die of subsequent neglect, as from any want of care and skill in transplanting.

As for the best crops to plant among young trees, we should prefer to leave the earth entirely bare, and kept always mellow, for a distance from each tree as far on *each* side as the height of the tree; but those who cannot be persuaded to do this should plant only *low, hoed crops*, such as potatoes, beets, turnips, &c, and avoid everything that is sown, whether grain or grass.

Stabling Cattle.

If you have a barn, cellar or shed for the protection of manure, you should begin the middle or last of August, to stable your cattle at night; and we know of farmers who, having good methods for ventilating their stables, keep their cattle up at night during the whole summer. But by the last of August or first of September, your cows and other neat stock, should be put up every night, and by leaving the doors and windows open, they will be more comfortable than if allowed to lay in the yard. The great object, however, of thus stabling your cattle so early, should be to manufacture manure, and we write this for those who have some means for the protection of the same. From September to December is the best season for making manure, of the whole year. Stable your cattle every night, and each morning put in a quantity of loam, dried muck, leaves, chip dirt, &c., to absorb the liquid, and then throw it into your manure shed, or cellar. You will find in the spring a valuable heap of dressing; and if the plan has never been practiced, you will be astonished at the great amount of manure which can be made with a little extra labor, and by keeping your cattle up nights.

Remedy for Cracked Hoofs.

Take a piece of copper four inches long, and two inches wide, and drill eight holes, four in each end, so as not to interfere with the crack, and screw it fast to the hoof, crossways of the crack; then take a hot iron with a sharp edge and burn the crack at the edge of the hair, till it goes through to the quick. After this, let the horse run on pasture, and it will begin to heal up in a few weeks. This remedy I have tried, and it done the work complete, and I worked the horse all the time. Care should be taken to close the crack tight before the plate is fastened on. A PRACTICAL FARMER. *Pleasant Valley, O.*

To Remove Films.

Having seen a number of remedies for taking a film from horse's or cattle's eyes, I'll give the method that I have practiced for years, without failing in a single instance. Take a piece of fresh butter, the size of a common walnut, and put it in the opposite ear—that is if left eye, put in right ear, if the butter is hard, hold the ear with your hand for a short time, until it melts and runs into their head; in most cases one application is all that is necessary. If you have not got the butter hog's lard will answer. G. D *Williamstown, Mass.*

Management of Pastures.

The subject of grass culture has recently (Co. Gent., April 14, 1859,) received some notice in our columns, and it is a matter we often take occasion, in its different aspects, to urge upon our readers. Looking over THAER'S *Principles of Agriculture*, we find some valuable thoughts on the management of pastures, some of which we condense and some of which we amplify the better to adapt them to the wants and means of American farmers.

1. *Drainage*—To produce good grasses, pastures must be entirely free from stagnant water either upon or near the surface. This is also requisite to the health of cattle, and especially sheep, feeding upon them. On swampy, marshy ground, drainage is of the first necessity, and constant care should be exercised to keep the drains in order. Though such land may be well stocked to grass, and produce valuable crops at first, if the drainage is interrupted and the water remains on or near the surface to become stagnant in spring, the cultivated grasses will soon give way to coarser herbage—water-grasses, flags, and rushes, take their place. A thorough system of underdraining, or carefuly watched open drains are necessary, and would often be attended with slight expense compared with their effect upon the value and amount produced by the land.

2. *Weeds.*—Care must be taken to eradicate all hurtful weeds, as well as those which crowd out the grass. Thistles in particular, multiply with great rapidity in rich pastures; animals will not touch them, consequently the seed ripens and takes root. They not only take up space which would otherwise be filled with grass, but prevent cattle from eating near their thorny leaves. These weeds are readily destroyed—if mown a few times during the height of their growth, they will eventually disappear, especially if this practice is followed up for several seasons. Most other weeds yield to the same treatment—the most tenacious and hardy cannot live if their leaves are constantly destroyed—and their eradication will be more rapid, if the pasture is at the same time encouraged by seeding and manure to the production of the grasses.

3. *Dung Droppings*—Occasional attention to spreading the manure dropped by cattle and horses at rest, will be advantageous to the pasture. If the dung is left undivided, the plants it covers are at first completely stifled; but the following year, strong tufts of coarse grass shoot up, which the cattle will not touch unless compelled by hunger. But when the manure is spread, the growth of grass is increased, and no distasteful flavor hinders animals from consuming the full product.

II. *Feeding Off*—Pastures should never be crowded with a greater number of animals than they can advantageously support. If fed too heavily, vegetation is checked—the plants have not time to attain a full growth; they are fed down closely, and then, in many cases, torn up by the roots. The injurious and impoverishing effect of this course is very evident. For the same and other reasons, cattle must not be turned into pastures too early or kept there too late.

On the other hand, it is equally injurious to a pasture to be grazed by too small a number of animals. The product is not fully employed, and the growth is lessened by the neglect. The herbage shoots up luxuriantly, and many plants appear which cattle refuse after they attain full growth. These grasses become still more luxuriant, while the finer kinds of herbage, closely consumed by the cattle, and crowded by the stronger plants, decrease and disappear. In permanent pastures, losses more frequently result from this cause than any other. And from those which stand for a few years only, the full benefit is not derived unless they are fed off with the proper amount of stock in due season.

Clover pastures especially, need care in this respect. They should attain a fine start in spring before feeding, and then sufficient stock should be turned on to consume the whole product. Then all, or the greater share, should be removed to other fields, and the pasture allowed rest until a fresh growth takes place, when it may again be fed, but less heavily than before. This course of treatment we have found to give the best results, while a different method allows the grass in spots to assume a mature growth untouched, while other portions are fed closely to the ground.

The advantages of changing pastures was frequently referred to during last year, and we gave (Co. Gent., Vol. XII, No. 13,) a *resumé* of THAER'S argument on the question.

Sherwood's Grain-Binder.

A few weeks since we gave a figure and description of this new machine. We have since witnessed its operation in the field. *It has proved successful*, so far as a single season's trial will establish success. It was attached to one of Wood's reapers, and one man bound with ease all the grain that the machine cut at the ordinary pace of a team of horses. The sheaves were well bound with the annealed wire, but were not quite so compact as ordinary binding, and the straw in some instances was not so parallel. These objections were however of little importance, and will no doubt be partly obviated by further experience. The wire used cost at the rate of about 16 cents per acre; a larger wire, say 20 or 25 cents per acre, would admit of very close binding. The inventor intends to make an improvement by which this object may be better secured, the operation as now performed, tending to break the wire if very tightly drawn, by the weight of the sheaf. Providing a support for the sheaf will tend to obviate the difficulty. An experiment was made by binding a portion of a field with the binder, and another portion by the ordinary mode. In drawing the several hundred sheaves into the barn, only two broke that were bound by the machine, and about twenty of those done by the ordinary way. One most important advantage resulting from the use of the binder, is the perfectly clean stubble, no grain or straw being scattered. This saving is thought to be fully equal to the cost of the wire.

We have no doubt that considerable improvement will be made in this invention, and that it is destined to prove one of importance. Much labor has been expended and many experiments have been made, in perfecting *self raking* machines, in a great measure without success The present machine, it will be perceived, is of much greater importance. A self-raker saves the labor of a single hand only. The binder saves the labor of three or four hands.

In thrashing grain bound by this machine, the wire was at first carefully taken off and laid aside; but subsequently it was found most convenient to put all through together, merely cutting the wire. It may often however be an object to save it for fence ties, a few twisted together answering well for this purpose.

Culture and Use of Vetches.

EDS. CO. GENT.--Having lately noticed in your excellent paper, various remarks and inquiries about vetches, I beg to offer the results of three or four year's experience in their culture on my *clay* farm.

I find them a most useful crop, and very profitable, as I grow them on land intended for fall wheat, and they take the place of naked fallow, which, indeed, I have nearly discarded, since I commenced their culture.

My plan is this: I make all the manure I can, and keep it over until the fall, then haul it out on the land intended for vetches and fall wheat next year; plow it in at once, and pretty deep, making my lands moderately narrow, and cleaning out all water furrows, cross ditches, &c., as carefully as I would for fall wheat. These lands being kept open by dung, dry by the ditches, and pulverized by Jack Frost, form a splendid seed bed in the spring. I then sow as early as possible, say from 15th to 20th of April, and have hitherto been rewarded by luxuriant crops. In a dropping season I have cut some three times, and still had a good after growth to plow under for the wheat.

My usual plan is to cut some for soiling purposes, (for which they are admirably adapted, all stock eating them ravenously,) and the remainder, when the pods are full, to be cured for winter feeding the sheep.

It is rather difficult to cure, being so very succulent, and sometimes so thick on the ground, that there is hardly room to spread and turn it; but I put it into small cocks and give it time; take it in pretty green, and put lots of salt on it, and the sheep will do the rest. I never saw any thing eaten so clean, or with such a relish as my *vetch hay* last winter.

To all inquirers I say decidedly, try it; write the results to the Co. Gent., and be it his to publish them throughout the agricultural universe.

If I may have a few more lines of your space, to point out the advantage of my system, I would add:

1st. That I consider them less exhausting than peas, or any other crop commonly grown before wheat, *because* I don't allow them to ripen their seed, and this it is that draws so hardly on the soil. (I grow my seed on a separate plot.)

2d. Presupposing that my land is tolerably clean, I avoid the naked summer fallow, which on a small farm is ruinously expensive, and actually, as I can show any visitor, have better wheat and better clover afterwards for years, than where I fallow the land on the old plan.

3d. I decidedly prefer hauling dung at a leisure time, and in cool weather in October, and then putting it *into* the ground where it *is* wanted, to toiling at it at midsummer, when I have hay to cut, potatoes to hoe, *weeds to kill*, and a variety of other jobs "too numerous to mention;" and then leaving it for ever so long in little heaps, to dry out, and "waste its sweetness on the desert air," where it is *not* wanted.

W. R. FORSTER. *Credit, Canada West, Aug.* 15.

How To Clarify Wines.

MESSRS. L. TUCKER & SON—In your last paper I see an inquiry for information how to clarify the different kinds of our domestic wines, and I take the liberty of giving you my practice of fining or clarifying all kinds of fermented liquors, which, however, never require artificial clarification if properly managed.

My wines of all kinds are always clear enough to bottle off the lees by March, except my grape wine, which I then rack into a sweet pure cask, in which I first burn a little sulphur—(say a bit of paper one by six inches coated with sulphur, for a half-barrel cask)—as soon as the paper, ignited and hung into the bung hole by a thin wire, is properly burning, the bung is put on tight so as to impregnate the wood of the cask with the sulphuric acid and in 30 minutes I put the wine into the cask, and fill with clean pebble stones to make the wine come up to the bung-hole, and bung up air-tight—then leave it at rest. The cask must be perfectly fast, and not be allowed to move or roll at all, until about the first of May, or in a cold cellar the first of June, when it is bottled. If the wine is not perfectly brilliant, (which all wine must be before bottled,) I rack it into another cask half full; stir in well the dissolved isinglass, fill it with all the wine, put on bung slightly, and bottle the third day, when it will be perfectly clear

I use fish sounds, (one quarter as cheap as isinglass,) and for a half-barrel take a good half-ounce with half-pint of water and a teaspoonful of tartaric acid; as it swells up add a little water, and when fully softened, (in about ten hours,) wash it fine and strain through a fine seive. Before using, beat it fine with a gallon of the wine, and stir well and long in the cask, first and when full. The fish sounds you can get at the druggists, or Shifflin & Brother, William street, New-York, can tell you where to get it at retail.

This is valuable information for which some people have paid money, and I hope it will be some benefit to your numerous subscribers.

The trifling quantity of sulphuric acid and tartaric acid with which the wine is impregnated, is a great benefit, as it prevents the absorption of oxygen from the atmosphere in the vine, and is not at all objectionable in regard to health. I would advise you never to attempt fining wine except it is drawn from the lees into a clean cask. FREDERICK SEITZ. *Easton, Pa.*

Cheap and Valuable Paint.

MESSRS. LUTHER TUCKER & SON—Yours, requesting me to send receipt for paint, was duly received. At the time it was not in my power to furnish it, for the reason that the book containing it was not in my possession. After many inquiries I found it yesterday in the hands of a neighbor who borrowed it some years since. I did not originate the composition, but found it in the second volume of Chaptal's Chemistry, (pages 68 and 69,) an old work published in 1807.

It is intended as a substitute for white lead paint, and is composed of

Skimmed milk, two quarts.
Fresh slacked lime, 6½ ounces.
Linseed oil, 4 ounces, and
Common whiting 3 pounds.

Directions for mixing are—"Put the lime into a stone-ware vessel, pour upon it sufficient of the milk to make it like thin cream, add the oil a little at a time, stirring to mix thoroughly; add the remainder of the milk; then the whiting (made fine) is to be spread upon the surface, and the whole well stirred. It is then fit for use. It should be frequently stirred while using."

It is applied with a common paint or white-wash brush, and will dry in three or four hours. Two coats make a very perfect paint. It possesses great solidity, will bear rubbing with a woolen cloth, and does not become dingy or yellow with smoke, &c., as much as lead paint.

I have used the composition only for inside of buildings on brick and wood. Twelve years since I painted the over-head flooring and timbers, underside of a store. It is now perfect; holds its color better than white lead; is much more economical, as the chief expense is the labor of putting on.

It is also recommended for out-door work by adding to the foregoing—2 ounces lime, 6 ounces oil, and 2 ounces white Burgundy pitch, the pitch to be melted in the oil by gentle heat, and added to the mixture. WM. H. WHITE. *Vergennes, Vt.*

Cure for Stretches in Sheep.

MESSRS. LUTHER TUCKER & SON—I notice in the Country Gentleman of July 14th, an inquiry for a remedy for stretches in sheep. My father has kept from six to twelve hundred sheep at a time, and when one is troubled with the stretches, we get on the fence, take the sheep by the hind legs, and give him two or three sudden jerks, then let him go. If the sheep shakes itself, all is right; but if it does not appear to get better soon, jerk him again. When attended to, I don't know that we have ever lost one with stretches

H. G. WISE. *Fleming, Cayuga Co., N. Y.*

A Ride on the Steam Plow.

By Prof. ALFRED L. KENNEDY, M. D.

EDITORS CO. GENT.—Yesterday will be ever memorable in a life by no means devoid of incident, for then was realized a long cherished wish to ride on a successful steam plow of American invention.—The day was balmy; fleecy clouds and a slight haze shielded man and nature from the summer sun. The oats, the last of our smaller cereals to yield up their treasures, were ready for the reapers, who were now rejoicing over all the land, because of a superabundant harvest. A fit day for the rendering of a judgment on a new means of agricultural progress - to inaugurate a great agricultural era. The committees of the Pennsylvania Agricultural Society and of its venerable prototype, the Philadelphia Society for Promoting Agriculture, were in attendence. The extensive grounds of the Oxford Park Association had been thrown open to the committee. And a decision was to be made on the merits of the invention of JOHN W. FAWKES, a Lancaster county mechanic, who after three years of almost despairing struggle and utter privation spent in the embodyment of his grand idea, now submitted the product of his genius to the highest tribunals of his native State and her metropolis. As he stood in the garb of a workman trying his gauges, or, in a sharp, quick tone, which told of mingled confidence and anxiety, giving orders to the foreman, his rough attire, soiled in such a cause, appeared more honorable than imperial purple. By his permission I stepped upon the engine, and stood by his side, as the shrill whistle gave the signal to start. The gang of eight 14 inch prairie plows, which until now had hung by chains to cranes at the rear of the machine, were quickly lowered until they rested on the hard sod. One movement of the lever, and onward we went, up an ascent of about seven degrees, and with a smooth, uniform motion. As the eight shares entered the soil I apprehended a sudden check and strain, like that felt when a railroad train is partially "braked up," but nothing of the kind was experienced. In the enormous driving wheel or rather drum, beneath my feet, I could not detect the least sliding on the sod. *The traction was perfect.*

Before us the beautiful green turf swept under the bow of our gallant craft. Behind us lay a wide deep-brown wake, in which scarce a tinge of green was visible. Under the stern the eight broad waves of sod lifted their crests, and rolled over like surges falling upon the beach. "Steady she goes," as our helmsman with hand upon the tiller, and eye upon the guide-wheels, keeps on his strait course. But we near the edge of our field. Two shrieks of the whistle, and up rise the plows. Starboard your helm! Round sweeps our craft as easily and gracefully as a bird on the wing, and we came again into line. Another whistle, and the plows are lowered, and in less time than that required to follow this sentence, she is off! A flush of triumphant pleasure mantles the face of the inventor. The grade slightly descends. The crowd which has toiled after us up the ascent, quicken their pace. Still we are leaving them. Now only the foremost - then the whole party break into a run, and shouts, like those which followed the triumphal car of a Roman conqueror, rend the air.

Many were the warm grasps of congratulation which greeted the American conqueror as he stepped from his car of triumph, and in modest terms proposed to subject the machine to any test which the committees might suggest. "Can you cross-plow the land you have just turned over?" "Yes sir," was his prompt reply, and whee ing his machine into position, he crossed at right angles the furrows previously thrown up. Subsequently gulleys were passed over, abrupt elevations surmounted, and finally the plows were detached and an omnibus hitched to the engine. "Here we are now, right off," cried a facetious passenger, and right off we were, going over the trotting course at a good round pace.

Feelings of intense gratification appeared to animate the entire assembly, and I left the grounds with emotions of thankfulness to that great and good Being, who in our own day had enabled a fellow countryman to make the giant steam tributary to the art of cultivation, and the means of untold blessings to millions. *Philadelphia, July* 21, 1859.

Farming in Western Texas.

The following letter from Maj. LELAND, formerly of the Metropolitan Hotel, New-York, has been furnished us for publication in the Country Gentleman:

COMAL PARISH, COMAL CO., TEXAS, 21st June, 1859.

According to promise, I send a letter from this far off and fast growing section of the Union. The population of this State in 1850 was 212,592; at this date it is upwards of 600,000. Most of the foreign population are Germans, who turn their attention to stock raising. It is the most profitable business yet followed, in proportion the amount of capital invested. Stock cattle from calves to three years old are worth $7 per head, and four year old beeves $15. Large droves of the latter are yearly driven or conveyed to California, St. Louis, Chicago, and to your Empire City of New-York.

The Texans cut no hay, for there is no need of any. The winters are like your November. Consequently you see in winter, as in summer, large herds of fine cattle grazing over the prairies, the luxuriant herbage affording them ample means of subsistence. Horses do equally as well as cattle. My cavieyard of 281 mares are looking well; the average value at this time $30 per head. Mules at three years old, good sizes, $100 per head. They are sent to the Brazos River and New-Orleans for a market. My sheep are looking unusually well; have three flocks of about 1,200 each, attended by three Germans as shepherds, whose salary amounts to $45 per month. They average about ½ to ¾ blood Merino, and are worth about $5 per head. Shear wool is worth $1 per head in your market yearly, if it is properly washed and packed clear of burrs Freight from here to New-York, one and a half cents per pound. I do not claim that Western Texas, where my ranch is located, is the best agricultural country, but I do claim it to be the best grazing country in the *wide world*, (you know I have traveled in three-quarters of the globe, and claim to be judge.) I am located on the Guadalupe River, near latitude 29 deg. 25 min., longitude 98 deg. 30 min., elevation 760 feet. About 160 miles from Matagorda bay, my shipping point, "Lavaca," having weekly packets to New-York. The enterprising citizens are building a Railroad to the city of San Antonio, within 35 miles of my ranch. Another road running to same destination from Galveston, is progressing rapidly.

The land in this county is well watered, and plenty of fine timber, live and post oak, cedar, elm; and pecan trees in abundance, furnish the rich pecan nuts, upon which my thousand hogs luxuriate and grow fat. They range sometimes ten miles, and get quite wild. Have to drive with dogs, and a *Hog hunt* is as exciting as a horse race at Epsom Course. Even that pays,—bacon being worth 12½ cents per pound in San Antonio. This county is hilly, plenty of limestone rock. Its area is 1,024 square miles; value of land per acre, improved, from $2 to $5; unimproved, from $1 to $4 per acre. No swamps, marshes or stagnant pools. Is a high, dry, and healthy country. Thermometer rarely goes below 45, or above 85 degrees. The State is out of debt, and has $2,000,000 in her treasury, set aside for internal improvements, interest upon which goes to support common schools. Texas also owns more than 1,500 000 acres of the best land in North America, and 15,930,776

acres, besides improved and unimproved farm lands, upon which they raise large quantities of sugar, cotton, rice, wheat, corn, and tobacco, with trifling taxes, only 12½ cents upon $100, valuation, (and that you can fix, without being qualified,) shows Texas to be the very best State to emigrate to. It is literally the land flowing with milk and honey. All one has to do is to milk and to gather the honey. W. W. LELAND.

The Cost and Profits of Drainage.

The "advantages of drainage" admitted, and its modes of constructing drains being understood, the next items of interest are the cost and the prospect of compensation. If the work will not pay, then of course it must be given over as utterly impracticable. As to the expense, operators are very generally agreed that a ditch three feet deep, and of suitable width, will cost from 30 to 40 cts. per rod, when the work is done by hand alone But of late a ditching plow has been constructed, which admits of the successive elevation of the draught-beam and handles, so that the earth may be loosened by it to the required depth. To this plow a span of horses is attached, by an evener or whipple-tree of five feet or more in length, so as to enable the respective horses to travel one on each side of the ditch. This obviates the necessity of using the pick, and one man with his span of horses and plow, will break up the earth as fast as from six to twelve men will shovel it out. By this means, the expense of excavating for the laying of the tile, is said to be reduced to about 10 or 12 cts per rod. This would amount to about eight or ten dollars per acre, where the drains were put two rods apart. Under the old system of digging by hand, the expense was from $24 to $30 per acre.

Now, if your tile cost you $10 per 1000, and you allow $4 more for transportation, laying, and covering, you have in one instance as the cost of draining an acre of land from $24 to $26, and in the other from $38 to $44. It is seldom, if ever, the expense runs as high as the last sum named, and the general average from $35 to $40. At this cost, experienced men tell us that under-drainage pays for itself within three years. In many instances it does so in the increase of the first year's crop—oftener in that of the first two years; but seldom, if ever, does it fail to repay by the time the third year's crop is gathered.

On this point I adduce the following testimony. Says the holder of a large farm, Renwickshire, England: "I drain so many acres every year, and I find myself always repaid by the end of the third season. If I have spare capital enough, therefore, to go on for three years, I can gradually drain any extent of land, by the repeated use of the same sum of money."

Says Mr. J. Johnston of Geneva, N. Y., when speaking of certain towns in Steuben county, of this State: "Some enterprising farmers have made great improvement, but the great complaint with them is, the want of capital to drain with. Let them, however, only do enough, and they would immediately have faith that it would pay all the expense of draining in about three years, by the excess in crops. Thus would they soon find the means to drain."

Of the same purport is the testimony of a person in Cayuga Co., N. Y. His draining cost him $32 per acre. The increase on his first crop of wheat, over the uniform average of previous years on the same kind of land undrained, would pay all the expenses of drainage in less than three years; and the increase of his corn crop in something over three years, estimating from the first year's increase. He says, however, "that the year was a very unfavorable one for the trial, so far as corn was concerned, and ordinarily he has little doubt, that the increase of the corn crop on drained over undrained lands in that region, would pay all the expense of drainage within three years." This, as I have said, is about the uniform testimony of those who have tried "thorough drainage" for wet, clayey soils. Testimony of a like nature might be adduced to an almost unlimited extent, but I shall content myself with repeating what is familiar to all who are conversant with the history of draining in England, viz, that when it was about being introduced there, the government offered loans to those farmers who desired to drain, but had not the requisite funds. Many availed themselves of the offer, and the large increase of their crops, enabled them to pay principal and interest within the brief time for which the loan was granted.

Ought not experience like this to convince the doubting, that draining will pay, even though means for its accomplishment must be procured by a loan? But few, if any, of our farmers, need resort to this latter expedient. They can commence on a small scale, and enlarge their operations as success and means warrant.

Do not run wild with the idea, however, that you must drain without reference to the character of your soil. Gravelly, or sandy loams, only need draining when underlaid with a hard subsoil. But cold, wet, clayey soils, which become adhesive after rains, and crack in drouth, may almost without an exception, be under-drained with a certainty of success. Only let there be no half way work about it—a drain here or there on a ten or twenty acre lot—but one three feet deep, every two rods, and then you may be sure the experiment "will pay." R.

The Wheat Crop—Seed Wheat, &c.

NEAR GENEVA, 23d July, 1859.

MESSRS. EDITORS—I have threshed my Missouri wheat, and have got 30½ bushels from the not quite one bushel sown. I have no doubt but the Hon. H. L. BROWN sent away a full bushel, but it was put up in an enormous strong box, and no doubt some person thought it contained something more valuable than wheat, as an augur hole had been bored in one side and plugged up, and some had no doubt been lost in that way, as it would lack nearly if not quite a quart when it arrived. The yield is very satisfactory.

We have had some hot weather of late, though cool to-day—thermometer 57° at 6 A. M. Corn has grown fast of late—I may say rapidly; still it is late, very little beginning to tassel. Our oats are doing better since our rains Wheat pretty much all cut in this neighborhood, and some have near all in. Barley and oats are late; some spring barley will be ready to cut next week. I presume the winter barley is all cut. Hay light on all land not highly manured, especially where it is closely pastured in autumn, and occasionally in winter and spring; much used in that manner, won't pay for cutting. I am expecting a large yield from my Soules wheat. I like it best if I could only make it come in ear about seven or eight days earlier, so that the midge could not sting it. Yours truly, JOHN JOHNSTON.

I have nine letters in three days, all about seed wheat, from Indiana, Ohio, Pennsylvania, Alabama, and our own State; but to make crops earlier, they must go South for seed; this, I think, I am sure of; but I don't see how the gentleman in Alabama can go much farther south. I have got a small sample of wheat sent me from Chili, South America, the finest I ever saw. J. J.

THE HESSIAN FLY.—A correspondent of the *Valley Farmer* writes as follows: "About the middle of August sow a strip of wheat adjoining where you intend to put your crop, say one or two acres. About the middle of September sow your field. When that has come up and shows clearly, plow under the first sown; turn it under well. The *fly is headed* and your crop is safe."

Steam Tillage in Europe and America.

[For the following remarks on this subject, including a full description of Mr. FAWKES' new Steam Plow, we are indebted to President KENNEDY of the Polytechnic College, Philadelphia.]

In common with many who have had the good fortune to be present at the 5 days public exhibition of Fawkes' Steam Plow just closed, I have been reminded by the scene, of the description given of the starting of *Fulton's* pioneer steamer on her experimental voyage to Albany. The two events have indeed many points of resemblance. That was the dawn of the era of successful steam navigation. Half a century has rolled round, and we stand at the opening of the grand eventful era of steam cultivation. One Pennsylvanian triumphed over the tempest and the tide. Another now triumphs over the wasteful powers of the wilderness, and rides the conqueror of the prairies. Verily, Lancaster county, proud as she is of her Calhoun and Buchanan, will be prouder still of her Fulton and her Fawkes, whose birth places are but 12 miles apart, and within her wide borders.

Let us not, however, amid our exultation, claim too much. It is not contended by Mr. Fawkes or his friends that he is the first to conceive the idea of applying steam to the cultivation of the soil. There was, if I mistake not, a steam plow at the London Exhibition of 1851. But it awakened no attention. Farmers went there, not to see it, but to see *M'Cormick's American Reaper!* In all the magnificent palace of industry, that was the grand agricultural attraction. Well do I remember hearing a jolly English farmer, as he stood with his hands in the pockets of his "box coat," surveying the reaper, say, "T'will be a pretty good sort of a thing after we've improved it" How I might have retaliated by going over to the English steam plow and saying the same thing. But America has done far better than to improve on an English model. Mr. Fawkes has invented a machine, new in principle, and distinct in its mode of operating. Let me explain. The great difficulty in the way of success in plowing, by steam is expressed in one word, TRACTION. The English early tried two broad tired driving wheels, but these sank too deeply into moist and loose soil, and of course failed. Mr. Boydell, who deserves immortality for his unceasing efforts and liberal expenditure, conceived the novel idea of running his engine on rails, to be laid down and taken up by the engine itself. This he accomplished by hinging seven or eight stout, flat, wooden rails together by both ends, so that they would form a polygon, outside and in the same plane with the driving wheels, and revolving with them, each rail in turn being laid down in front and taken up behind its proper driving wheel as the latter rolled over it. In this very ingenious way Mr. Boydell gets traction, but at a great expense of power. Mr Bray, another Englishman, adopts a similar plan. Owing probably to the high cost, great loss of power and expense of working on soil, the English Agricultural press have, during the last year, practically *abandoned* the idea of using traction engines for tillage, and have advocated the inventions of Fowler, Williams and Smith, on the cable principle. The engine is similar to our powerful portable farm and saw-mill engines, and is provided with a drum revolving horizontally between the four wheels. This engine is placed, for plowing, in one corner of a large field, a tender with a similar drum is placed in the next corner, and over the drums of both engine and tender an endless wire rope passes. To this rope a gang plow is attached, which, by the revolution of the rope, is made to travel between the engine and tender. These are moved regularly down the opposite margins of the field which is thus gradually plowed. The other cable machines slightly differ from Fowler's, by having the cable to pass entirely round the field, instead of across it. Smith's machine costs about $2500 at the factory, will plow seven acres a day, and requires the attendance of an engineer, six men, and a horse and cart to bring water. Fowler's machine costs $2800 at the factory, will plow eight acres a day, and requires an engineer, four men and a boy to attend it.

As I write, the mail brings me the report of the grand trial of steam plows, for the prize of the Royal Agricultural Society of England, just held at Warwick. We have therefore the latest reliable information of the performances of the best English machines. But one traction engine competed, that of Mr. Romaine, which is a return to the old and very properly discarded plan of two driving wheels, and therefore need not be described; especially as the report says it is "*practically inefficient*, even after the vast sums expended on it."

The prize was awarded to Fowler's cable machine, above described, "for the most economical application of steam power to the cultivation of the land." For the purpose of comparing the best English steam plow with the American, I quote from the same report, that "on a stiff, badly drained piece of seed land, having an incline of one foot in ten, it broke up 2 roods, 16 perches per hour, at a depth of about six inches," that is exactly three fifths of an acre per hour.

DESCRIPTION OF FAWKES' AMERICAN STEAM PLOW.—The body of the engine consists of one horizontal, quadrangular frame of iron, about twelve feet long by eight wide, which rests upon the axles of a roller. This roller, which is six feet in diameter, and six feet long, is the driving wheel of the engine. In front of the roller, and bolted within the frame, is the boiler, which is upright, surmounted by a dome and pipe, and so constructed that steam may be got up in fifteen minutes. Thirty minutes, however, are usually required. Over and behind the driving roller is the water tank, which is of the entire width of the engine frame, contains 12 barrels, sufficient to supply the boiler for five hours, and is so situated that when it and the boiler are full, they counterbalance each other upon the roller. Attached to the frame in front of the boiler, and tapering forward and slightly upward, like the bow of a boat, is a sheet iron receptacle for coal. Here is also a seat for the fireman, the whole bow resting on two guide wheels of fifteen inches tread, and four feet diameter. Bolted to the under side of the frame, as frequently seen in locomotives, and on each side of the upright boiler, are the cylinders, each nine inch diameter, and fifteen inch stroke, the piston rods of which are so geared to the crank of the roller that it revolves once for every six strokes of the piston. Great regularity of motion, increase of motive power, and control over movement of the engine backwards and forwards, are secured by this arrangement, while the guide wheels, which may be turned at pleasure,

by a steering wheel in charge of the engineer, almost at right angles, under the bow of the machine, permit it to turn in a circle, the radiius of which is equal to the length of the engine, eighteen feet. By a small independent "donkey engine," which is placed between the tank and the boiler, the latter may be filled from the former, or the tank itself be through a hose supplied from a well or brook. Into the beams, projecting from the rear of the engine, pulleys are let, over which chains pass, whereby a gang of eight fourteen inch prairie plows is suspended; a wheel on the beam of each plow regulates, as usual, the depth of the furrow, and the whole gang may be raised or lowered by a lever within the reach of the fireman, who, with the engineer, constitute the entire force needed to work the engine and plows.

The machine was tested on timothy sod which had not been plowed for seven years. At a given signal from the whistle, the fireman lowered the plows to the ground, which, having entered, they were drawn forward up an incline of about seven degrees. They were lifted promptly at the margin of the land appropriated to the trial, the machine turning easily; again they were lowered and the plowing resumed, in as short a time as could have been done with a single plow and a pair of horses. The mean rate of speed was four miles an hour, and the united furrows were 9 ft. 4 in. wide; a strip 4 miles long, 9 ft. 4 in. wide, equals 197,120 square feet, which divided by the number of feet in an acre, gives almost exactly 4 3-10th acres per hour.

Allowing for the time lost in turning, and all other necessary delays, the engine proved itself fully capable of plowing thirty acres a day. The amount of fuel required being, according to the engineer, a half ton of coal, or the equivalent in wood. The plow was run over gullies and abrupt elevations, and stood every test in the most satisfactory manner. Its performance proved its perfect adaptedness to prairie cultivation, and to the tillage of large fields. By a very simple arrangement, the roller, which is composed of wooden staves bolted to open iron heads, may be lifted from the ground, geared, directly to the piston rod. It thus becomes a rapidly revolving drum, over which a band is passed, and the whole converted into a farm engine for driving saws, thrashing machines, sugar and grain mills, &c. This ready conversion of a plowing locomotive into a farm engine, multiplies vastly the uses of the machine.

To conclude: The American machine will easily and regularly plow 3 acres an hour, with the aid of two men. Fowler's English prize machine may be made to plow three-fifths of an acre an hour, with the attendance of five men and a boy. That is to say, Fawkes with two men, will plow five acres in the same time that Fowler, with five men and a boy, will plow one. That this is the "most economical" of English machines is attested by the highest authority; but we guess that an American farmer would place a plow and a pair of horses each, in the hands of "five men and a boy," and beat Mr. Fowler long before sunset. Let then the record stand, that at the present time the only *economical and practical application* of steam to tillage, is of American invention.

Bees.—Mr. Geo. Gebhart of Union City, Indiana, writes us that he made $150, clear profit, on eighteen stands of bees, the last season, kept in common hives.

Muck for the Compost Heap.

During last year we gave a series of articles to show the value and uses of swamp muck, or peat as a fertilizing material—when used by itself and also for composting with all substances of a more active fermentable character—showing by practical examples that it could be very profitably employed for admixture with barn-yard manure, ashes, lime, dissolved bones, night soil, guano, etc., thus largely increasing the amount and value of fertilizing material available to the farmer, and enabling him to improve his land and enlarge the product and profit of the same. We need not now, perhaps, recall or extend remarks on this subject, but a reminder that the present is the most favorable time to secure a supply of muck, may be useful and necessary.

The best deposits of muck are usually too wet for digging in the fall or winter, and can only be drawn upon to good advantage during the dry weather of mid-summer. If available at other seasons, leisure for the work is often wanting. Besides, when comparatively dry, there is less weight to move, and the material is in a better state for use—will lie more lightly in the heaps, and they gain greater exposure to the air while "seasoning." When muck is dug out and piled on dry land, "the air and rains gradually dissipate the acid which the peat contains when in its natural bed, and which must be dispelled or neutralized before the peat can afford nourishment to plants." This acid is neutralized by fermentation, hence, muck may be used in composts immediately from the swamp, though it is less valuable than after exposure and partial decomposition in the air and sunlight.

Where practicable we would advise the farmer, not only to cover the surface of his barnyard (after the removal of the manure) with muck eight or ten inches in depth, but pile all he can find time to draw out, near the barn, to be employed as an absorbent of the liquid of the stables during winter, and for composting with any of the substances formerly mentioned. It will also be found very convenient for mixing with hen and hog manure, in the spring, for hill manuring corn, and also with guano, bone dust, night soil, or superphosphate for a like purpose. When the barn manure is drawn out during the summer as a fertilizer, for wheat, or for top-dressing dry grass lands, muck may profitably form one-half the bulk of the same, especially if the two are heaped together in layers for a few weeks, and allowed to partially decompose, as they should, to attain their greatest value. We are now, every leisure half day, getting out muck and mixing it directly with barn manure, for application to our wheat crop, the same practice last year having proved very successful.

The conceded value of muck for increasing the quantity and quality of available home manures, render it worthy the attention of every farmer within whose reach it lies. Thousands of swamps are now accessible, and there are few places where muck, either from these or from the beds of sluggish streams, or margin of woods and like situations, cannot be procured to any desirable extent by the enterprising farmer.

F. G. Allen of East Hamburg, Erie Co., N. Y., sold the present year *eighty bushels* of strawberries from one acre of land, which yielded him about three hundred dollars, besides the amount paid for commission in selling in Buffalo market. The varieties were chiefly Large Early Scarlet and Hovey. He is now planting the Wilson, and expects larger returns from this sort.

Honey Dew.

TO MR. QUINBY—*Dear Sir:* At the suggestion of my friend, Mr. L. A. BROWN, who perhaps may have been in correspondence with you upon the topic of honey dew, I drop these lines; and I do so with the greater pleasure, in as much as I have heard through the same source that you had never witnessed the existence of such a phenomenon as honey dew.

The present as well as the spring and summer of 1857, is somewhat famous for its honey dews in this state, (Missouri.) It falls in this country frequently until the foliage of the trees is glazed over sufficiently to make one's hands sticky and unpleasant by handling them, or to soil a person's clothes by riding through the under growth of timber. This particularly occurs in those seasons in which rain seldom falls to wash it from the place of deposit But the phenomenon to which I will more particularly allude, I witnessed in the summer of 1850. I commanded an over-land expedition from the frontiers of Missouri to California; and on Humboldt's (sometimes called St. Mary's) river, between the Rocky and Siera Nevado mountains—when about seventy-five miles above the natural meadow, or about ninety miles above the sink of that river, and on its north side, I first came in contact with the honey dew. By reference to my journal I find that it was on the 11th day of August, 1850. I shall here give you the language of my journal verbatim.

"At this juncture our stock became literally smeared over with honey, so much so that we were compelled to swim them in the river to cleanse their hair—on the discovery of which I immediately repaired to the grove of willows in which they had been brousing, and there witnessed many of the willows with their tops bent to the ground under the weight of honey dew, which had accumulated upon the foliage and twigs, in globules varying from the size of a grain of wheat to that of a large cherry, which forcibly brought to my mind the scriptural account of the manna in the wilderness. These globules were mostly candid. We observed this phenomenon in the last two day's travel, and while among the honey dew we broke twigs from the trees to sweeten our coffee, and satisfied our rapacious appetites completely by eating the larger globules."

This honey was as good and pure, (and better perhaps,) than any that I had ever before eaten. Mr. Jackson, from Hickory county in this state who had been travelling with us, stopped to gather a barrel of honey, but with what success I have never learned. The idea might suggest itself to some that this honey had been accumulating for years, which is contraindicated; first, for the reason that the willows shed their foliage every fall; and secondly for the reason that it rains incessantly through a portion of the winter and spring, which would wash it clean from the trees. There being no rain the latter part of spring and summer, forces the conviction upon our minds that it had all collected after the cessation of the spring rains. I have never seen bees sucking at honey dew, and I have not heard any one else say that they had. We saw no bees beyond the confines of civilization.

The great amount of labor you have bestowed upon the culture of bees, and the vast amount of information you have disseminated through the medium of the press, I hope sir, will be a sufficient apology for this sketch. J. C. HEBERLING. *Boon's Lick, Missouri, July* 10, 1859.

Butter Making.

From the advanced sheets of the forthcoming Annual Report of Ohio State Board of Agriculture, we make some extracts from an Essay on the art of Butter Making, written by Peter Hathaway, who has had thirty years experience as a practical dairyman. Passing by those portions referring to the choice of stock for the dairy, influence of feed, shelter, &c., we give extracts relating to the care of the milk and churning. to be followed next week by directions for working and packing the butter.

CARE OF THE MILK.—Immediately on the receipt of milk in the house, let it be strained into six quart tin pans, and set on a long, narrow table, or on the floor of the dairy apartment, as the temperature of the season may indicate. For cleanliness and convenience, the table is preferable, but the floor may be used when the weather is very warm.

It may here, once for all, be written down, that great cleanliness must be observed ever and always in butter making. The atmosphere, the table, the vessels, the floor, every thing must be kept sweet and clean. The neat dairy woman will not allow dusty coats, muddy boots, or tobacco odor, to come in close proximity to her butter bowl or milk table.

The time during which the milk should remain set, depends upon the temperature, natural or artificial, of the dairy apartment. Just long enough for all the cream to rise, and no longer, is the rule, economically considered; yet if a sample of very choice butter is desired, regardless of economy, the cream may be skimmed off and churned sweet; this practice cannot be recommended as an ordinary one—it is wasteful. Again, if the cream is skimmed when the milk sours, before it coagulates, or in the phrase of the dairy, becomes lobbard, choice butter may be made; but in order to obtain all the cream, it is necessary to wait till the milk coagulates. Very important is it that the cream be now removed before the milk and cream become wheyish; if this change occurs, good butter cannot be made. It is the want of skill and attention, at this point, that causes much of the failure in making butter, in the practice of ordinary operators. The cream should now be stored in a stone crock; if it is to be kept till the next day, a small handful of salt added, and the mass stirred with a wooden spatula, kept for the purpose. When more cream is added on the succeeding day, the stirring may be repeated without further addition of salt. This process is to prevent the formation of whey. If the dairy is large enough, a daily churning will certainly be preferable; in that case put the cream in the churn as it is skimmed. In warm weather the churning should, in all cases, be performed as often as every other day.

CHURNING.—The kind of churn I leave to the fancy of the operator. The kind I prefer is an upright cylindrical shaped churn, made of oak; both extremities of the same size, and having a slight bilge, not in the middle, as in a barrel, but swelling a few inches from the bottom. In such a churn, the dash nearly fills the churn from top to bottom, excepting the slight bilge, and all the cream is continuously and uniformly agitated. The cream should be brought by cold or warm water surrounding it, or by such appliances as the ingenuity of the operator may devise, to the temperature of sixty-two degrees Fahrenheit, and at that temperature churned. I have known most excellent butter made by a skillful dairywoman, without other thermometer than a little of the cream taken on the finger and touched to her forehead. Experience has proved, that such a stroke of the churn-dash as will bring the butter in about thirty minutes, makes the best butter. At a temperature of about sixty-two degrees Fahrenheit, from fifty to sixty strokes of the dash per minute will accomplish this result, if care is taken to strike the top of the cream and the bottom of the churn at every stroke. If the churn be filled, so that the dash cannot strike the top of the cream, the operation can scarcely be accomplished at all. Rapid churning should be avoided at the commencement, though the motion may be accelerated after the cream curdles with butter. The butter, when sufficiently gathered by churning, should be transferred with a wooden ladle to a wooden bowl.

Lemon Pudding and Cakes.

MESSRS. EDITORS—I send you a very nice recipe for lemon pudding, which I received from an excellent little housekeeper in New-York city. It is to be eaten cold without any sauce.

Two large lemons
One pound of loaf sugar, or light brown sugar will do very well.
Four ounces of butter.
One pint of cream or milk.
Eight eggs.
Grate the rind of the lemon.
Squeeze all the juice.

Mix the butter and sugar thoroughly together—beat the eggs well, and add the juice the last thing—a little salt. Bake three-quarters of an hour in a moderate oven.

A Very nice Breakfast or Tea Cake.

Half a cup of butter. } Stirred together.
Quarter cup of sugar. }
One cup of milk.
Half a pint of flour.
Two eggs.
Two teaspoonfuls of cream tartar.
One teaspoonful of soda—a little salt.

Sugar Cookies.

Three cups of sugar.
Two cups of butter.
Three Eggs.
Four tablespoonfuls of sour cream.
One teaspoonful of saleratus. M. H. K. *Auburn.*

New Strawberry Beds.

It is a great mistake to continue to cumber the ground with old strawberry plantations, producing about two-thirds of a crop or less of half sized fruit, when a new plantation may be secured with so little cost of time or money. A bed carefully prepared and planted at this time with strong runners, will bear a partial crop the ensuing summer, and a full crop the year after. We would not retain a bed over three years.

Many farmers have not the energy to plow up an old weedy patch of some worthless variety, which has degenerated still lower by bad cultivation, lest a few dollars should be required to secure two or three hundred plants of a well tested and profitable variety, such as the "Albany." On inquiry we frequently find that persons of judgment in others matters, really retain unknown varieties, occupying ground merely because they found them there, such sorts as Cushing, Extra Red, Crimson Cone, and varieties even worse than these.

Ground, where a crop of potatoes has been taken off, will suit well for a strawberry plantation; let it be thoroughly plowed and harrowed, remove all weeds, turn in a good supply of prepared compost, such as we have before advised should be held in requisition for such purposes, and plant in rows three feet apart, plants nine inches in the rows. Some planters would give a wider row, but we do not wish to frighten our more economical readers. At this season the best practice is to draw a deep rut with the hoe, and set the plant in it; this serves to shade its roots somewhat from the sun, till it recovers transplanting.

All plants removed at this season, should have a few of the outside leaves trimmed off, and the roots immersed in a mixture of clay and barn-yard manure, as we do with cabbage plants. If an opportunity offers to plant immediately before rain, this may be unnecessary, as some object to it, that it mats the fibres and prevents them from spreading so readily in the soil. It is a very good plan to water them thoroughly before setting out the plants.

If we say plant the "Albany," we only repeat the general cry, but we would add Hovey's Seedling, Burr's Pine and Early Scarlet, to the one variety in a plantation of any reasonable extent. S.

Preserving Fruits for Winter.

For three years past we have tried drying rhubarb, but are not pleased with our experiments. We cut it in pieces about an inch long, and either string it or place on dishes near the stove. There is no difficulty in drying it, but as the stalks are composed principally of water, (about 90 per ct. I should think,) it loses so much by drying that no soaking can afterwards restore it to its original taste or consistence. Last year we canned it with perfect success, thus retaining all the flavor and juices, and having it at all times fresh and ready for use. This will be found a *cheaper* mode of preserving it than drying, and it is certainly much better.

I think it far better to can all such fruits as peaches, plums, cherries, gooseberries, currants, blackberries, strawberries, tomatoes, &c., than to dry them, as drying must injure more or less the flavor of the fruit. And, after a supply of cans is once obtained, the cost of putting up is trifling, and with care the cans will last a lifetime.

For very acid fruits, as pie-plant, gooseberries, currants, &c., glass, stone or queens-ware jars are preferable, but tin cans answer well for many sorts, and are not liable to break, and also by contracting as the fruit cools after sealing, shows whether the atmosphere is perfectly excluded.

If every family in the land had a daily supply of canned fruits, what an immense auxiliary to the health and happiness of community it would prove! the effect being to improve and cheapen the diet. I doubt whether there is a locality anywhere in America, where cannot be found fruit of some sort, either native or cultivated, that may be turned to valuable account in this way.

Among cultivated fruits in this section, none can be cheaper, more likely to "hit," or in my opinion more healthy for use in warm weather, than rhubarb or pie-plant; and the best single variety of this is beyond question the Linnæus, which is more productive than any other variety, starting early in spring, and if the season is favorable, growing till late in the fall, while the flavor is superior to any other known sort. Downing's Colossal is very nearly as good, but is not productive here until midsummer, which is too late for profitable marketing.

I have about a ton of stems of Linnæus now growing, and would be glad to know whether *it will pay* to manufacture it into wine.

I saw an apparatus lately for extracting the air from cans of fruit by burning alcohol at the mouth, thus obviating the necessity of cooking the fruit, or of changing its natural appearance or taste. It is being tested this year on strawberries, raspberries, &c. Grapes are very easily preserved all winter, by packing when thoroughly ripe in a barrel, with kiln-dried sawdust between the layers of grapes; keeping the barrels in a dry cellar, secure from frost. E. Y. Teas. *Richmond, Ind.*

Cure for a Felon.

Make a thin mortar of soap and lime—take a thimble with a top to it, fill it with the mortar, and place it directly over the part afflicted—bind it on so as to exclude the air, and renew it once in two or three hours till it eats through the skin. After that apply a poultice made of flax seed and Indian meal, till the inflammation has subsided. Then dress it with a salve of white pine turpentine, mutton tallow and beeswax, equal parts. E. J.

How to Improve the Stream of Milk.

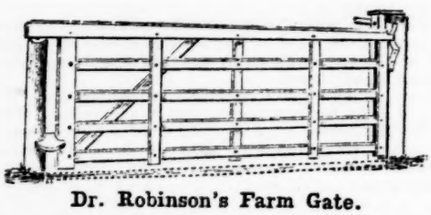
I have a valuadle cow four years old—no fault with her but a very hard milker. I wish to inquire if you know a remedy, and if so, let us know through The Cultivator, and very much oblige John Carter. *Leominster, Mass.*

Another correspondent—Berkshire—makes an inquiry similar to the above. In looking over the past volumes of the Co. Gent., we find an inquiry of the same character, answered by different correspondents in the same way. The reply there given is to take a small sharp pointed penknife in one hand, grasp the teat firmly in the other, and by a quick, steady motion insert the blade an inch or more into the orifice through which the milk passes. Those who have tried this, have pronounced it a certain cure, and will seldom need repeating.

Reaping vs. Cradling.

Messrs. Editors—To show the superiority of reaping machines over cradles, I will give you a case on my neighbor's farm (Mr. Swan's.) He had eighteeu acres of very heavy wheat, very much lodged. He thought, and I thought it would be impossible to cut it with the machine, and he let it by the acre to be cut by cradles or scythes as best it could be done. The cradlers had often cradled for me, and I knew them to be as good as I ever saw. Well they went at it, and worked some four days, making very little progress; and although they were to have $3.50 per acre for cutting and binding, they could not make anything like wages. After they had worked 3 or 4 days, and six men of them, Mr. Swan saw that it would be lost, or part of it, before they could cut it, and put in his machine—one of Burral's—setting it as low as he could; and he cut it very well—far better than the cradlers could do; and although he could cut it only one way—could not go round a piece—I have no doubt he cut all of nine acres in one and a half days. The cradlers declared they never would cradle any more as long as a machine was to be got. They said they had always been prejudiced against them—thought they had only been useful on light grain, but now they had got their eyes opened, and if ever they took such another job they would have a pair of horses and a reaper.

For the benefit of Mr. Clizbe, Mr. Bundy, and farmers like them, I will state that I have a 40 acre field, that ten years ago I never could get mown for less than $45, with board, and often more—(when in clover much more) Now it is generally cut in three and a half days by one man and a pair of horses, with a machine. Now these advocates for man machines may figure out how much I save by the machine, besides saving time. Our machine has cut over 70 acres this season without any repair. John Johnston. *Geneva, July 27.*



Dr. Robinson's Farm Gate.

The accompanying figures represent a farm gate constructed by Dr. D. A. Robinson of Union Springs, which for strength, durability, and cheapness, combined, we have not seen equalled. It is not given as an original invention, but as an excellent combination which he has effected of the various contrivances he has occasionally met with, and which we think forms an admirable whole. There are other gates more perfect than this, but none that we have seen equal to it for the same cost of construction.

It may be made of any light, tough and durable wood, but answers a good purpose when made of pine, with the upright or cross-bars of white oak. The upper horizontal bar is 11 feet long, 3 inches wide horizontally, and 5 inches deep at the hinge, and 2½ at the latch. Its mortises are only two-thirds through, to shut out rain, and 5-8ths by 3 inches—except of the heel-piece it is an inch and a quarter. The heel-piece is 3 by 5 inches, and the four lower bars are boards 1 by 5 inches. The cross-bars, the brace, and the two pieces forming the head-post, are 1 by 3 inches. They are secured at each crossing by wrought or annealed nails. The head-piece consists merely of two boards, nailed on each side of the horizontal boards. All the stuff forming the frame of the gate proper being 3 inches wide, may be sawed with little waste from the log; and the top bar by sawing alternately, for the taper. The gate is four feet high.

An important advantage is the protection of every mortise, and of the hinge and latch from the weather. The hinge is made by driving an iron rod, at least three-fourths of an inch in diameter, into the top of the post, (fig. 1,) which turns in a hole seven-eighths of an inch, bored two-thirds of the distance through the large end of the upper bar. A short iron plug driven into this hole, makes a hard resting point that will not wear, for the gate to turn upon. Fig. 2 shows the wooden collar which fits the round post and completes the hinge.

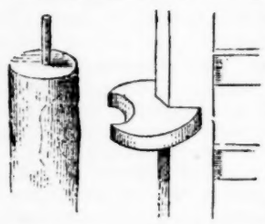


Fig. 1. Fig. 2.

The latch being fastened to the fixed post at the head, and not to the gate itself, may be made stouter and more durable, and the gate not being encumbered with it, is less liable to be injured or broken, and swings lighter and freer on the hinges. The end of the bar itself, (*a*, fig. 3,) with the massive latch *b*, (the latter only rising as the gate shuts, and dropping again to secure it,) constitute a very strong fastening. The inclined plane *c*, which is faced with thick sheet-tin, (figs. 3 and 4,) is added only to facilitate fastening when the gate sags, as all wooden gates will, but this less than others, *because there is no weight whatever straining the hinges, except while the gate is open.* A pin or spike is driven into the post on which the hinges turn, just above the lower hinge, to prevent hogs or other animals from lifting the gate, and which does not prevent it from being placed on its hinges while open. The post holding the latch may be rough except the face; and the other may be rounded only where the hinge turns.

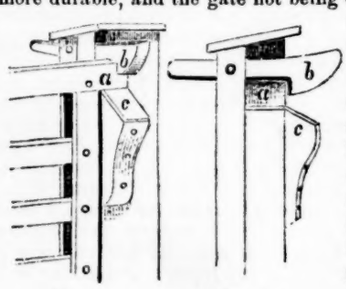


Fig. 3. Fig. 4.

The whole cost of the hinges need not exceed ten cents, and the gate itself may be made at no greater expense than a common set of bars.

Dr. ROBINSON has furnished us the following account of the mode he has adopted for setting and hanging this gate:

In setting the gate, after digging the holes, prepare the post for the reception of the gate by driving in the iron pin or bolt at the top, and rounding that part of it where the lower hinge or collar is to turn; then put it to its place in the hole, but before securing in its place, hang the gate to it, and block it up in the position in which it is to remain. Then fill in the earth around the post and beat it hard, giving the post at the same time the proper lean in the opposite direction in which it is to swing—by observing this rule, the outer end of the gate when open to a right angle, should raise 8 or 10 inches from a direct horizontal line. This carries the gate more easily over snow-drifts in winter; or any other obstruction, and will shut of itself when passed a little from the right angle. In setting the other or head post, observe to give it the same angle of the one the gate is hung to, that it may strike the banger evenly when it is shut.

Beautiful Sample of Wheat.

NEAR GENEVA, 10th Aug., 1859.

MESSRS EDITORS—I send you a sample of Soules' wheat, cleaned for seed. I am sending the same kind to Indiana, and to Jefferson Co., in this State. It is the kind that don't produce chess, unless chess is previously in the soil. Yours truly, JOHN JOHNSTON.

P. S.—Our yield of wheat must be very large, but I will weigh it all, and then I shall know. It is a wonderfully fine crop We have thrashed 39 acres, but I must not tell how much the yield is until I weigh it, least the tally in measuring may not be correct. J. J.

The wheat sent is indeed a fine sample. The kernels are large and plump, and it would be a good sight to see grain growing which produces such beautiful wheat as this, which our friend and correspondent has forwarded us.

FLOWERING OF POTATOES.—Dr. MANBY, an eminen English agriculturist, and the author of a Prize Essay on the cultivation of Early Potatoes, says in that essay, which has recently been published, that "a flower to an early potato is considered a sign of deterioration, the first symptom of *growing out*, it being contended that all the strength of the plant should be thrown into perfecting the tuber, and not into the opposite extreme." He would therefore eradicate them as soon as they appear, and save seed from plants which have shown no indication of flowering. Experiments have shown that potato plants beginning to show a tendency to flower, perfect their tubers less early and perfectly than before that tendency was developed.

Foreign Editorial Correspondence.

The IXth letter of our associate is devoted to the description of the celebrated Nursery of THOS. RIVERS, Saubridgeworth, England, and an account of Mr. JONAS WEBB'S annual Ram Letting. From this letter, published in the COUNTRY GENTLEMAN, we make the following extracts:

Mr. Rivers' Nursery.

LONDON, JULY 11, 1859.

My last letter ended with the Show at Ipswich. Then follow an examination of the establishment of Messrs. RANSOMES & SIMS; a day or two passed upon the extensive farms of Mr. CRISP, whose stock I wrote about, and another, spent, under the kind guidance of the Hon. Col. HOOD, in looking over the four thousand acres farmed near Windsor, by his Royal Highness PRINCE ALBERT. Of these three instructive as well as very interesting visits, I defer speaking for the present.

Leaving London on the very warm afternoon of the sixth of July, I discovered that on my way to Mr. JONAS WEBB'S noted Ram Letting, I might devote a little while to the extensive nurseries of THOS. RIVERS. Reaching Sawbridgeworth station in about an hour, and after a walk across the fields, through an old churchyard, past a company of cricket players, and, at last, a short distance upon the turnpike, I easily guessed that I was near my destination from the bank still blooming with roses which overhung the last part of the way. For a hundred and forty years, father and son in succession, four generations, have been building up the high reputation deserved by long-tried integrity of management, to which there is now also added the distinction of the present Mr. Rivers for wide horticultural knowledge, and a pen useful to the public.

The grounds occupy a hundred acres, and are devoted to the usual variety of nursery productions, especial pre-eminence being given however to Roses. The days of summer roses have sadly waned, and the tide of general favor runs strongly with those which keep their blooms in this climate with general constancy, from June until November. In former times there were nominally some two thousand of the summer varieties; now Mr. Rivers only catalogues about a hundred, together with fifteen or twenty climbers, although he has more if they are called for. The growing of climbing roses upon tall standards was novel to me, although not new here; some of them thus form beautiful pendulous trees, or they may be budded upon stout stems two or three feet in height and the shoots suffered to rest upon the ground, when the result will be a dome shaped mass of flowers in the blooming season. Fortune's Yellow makes a free blooming climber upon a wall with any other than a northern or north-easterly aspect, and as a half-standard is converted into a fine lawn tree, the unusual color of its flowers rendering it at once attractive. * * *

When we come to fruits we shall find that Mr. Rivers, like our own largest nurserymen, has an extensive assortment of specimen bearing trees. His collection of pears at one time included *one thousand varieties;* several hundred of them he has, on trial, rooted out, and he still finds it necessary to apologize a little for the large number his Catalogue still enumerates. In growing pears of any kind, he has found a "black moor earth," taken from low situations near brooks and rivers, very useful; not in an unprepared state, however, but with an eighth part of unslacked lime spread over and mixed in with it, when, after five or six weeks, it becomes an excellent compost, and may be applied alone, or to a barrowful of it, a half-bushel of burnt earth and an equal quantity of rotted manure may be added, and one barrowful of the mixture applied to each tree. He presses strongly the importance of root-prunning, to ensure success in pear culture, either on its own root or on the quince; this he accomplishes by taking up the tree and replanting it early in November every alternate autumn—digging a trench around the tree 15 inches from its stem, and lifting it carefully from the ground with all the earth possible still attached; cutting off straggling roots, and, if the soil is rich, putting two or three inches of it into the hole before the tree is replaced, so as to prevent its settling—if the soil is not so rich, substituting, to answer this purpose, a little of the compost I have just described, or well rotted dung, not less than six months old. Mr. Rivers trains both apples and pears to grow as garden bushes as well as pyramidal dwarfs. He is also adopting what I understood to be an entirely new system, that is keeping the pear to a single stem of perhaps six feet in height, and pinching off the shoots so that the fruit spurs next to the stem are the ones left to bear. This will, he thinks, become a popular way, as it economizes space, and the fruit is all well ripened and easily gathered.

Pears, as well as apples and plums, and particularly peaches, are largely grown here as espaliers, trained upon walls, or upon stakes and railings along the garden walks; sometimes they are also seen trained upon a horizontal frame. Mr. Rivers has a cheap method of accomplishing a double purpose; tall stakes, perhaps ten or twelve feet high, are connected by rails along near the top; these trellises take the place of walls, are much cheaper, and besides an apple or pear may grow quite well on the northern side, while the southern is taken for a peach or apricot. The collection of apples includes three hundred and sixty varieties; that of cherries upwards of two hundred; of peaches, our Early York was mentioned to me particularly as being considered a most valuable acquisition. I was shown some plum trees, of a seedling variety, in boxes with *ripe fruit*, not forced by any heat, and only sheltered when in bloom, by putting them one or two nights out of the danger of frost—a remarkable instance of early ripening. American strawberries don't seem to succeed well as travellers to other countries. The Lawton blackberry is not regarded much, if at all, superior in quality to the ordinary sort here, but it ripens earlier.

The soil of Mr. R's nursery varies from a light calcareous sand to a stiff loamy clay. The cultivation is exceedingly clean. It was a great pity, however, to see no pears at all, and very few apples, on so many trees—fruit is generally this season an entire failure, or nearly so, in England, and those of us at home who know how to export good apples properly, and who happen to have nice ones to dispose of, will doubtless be able to find a ready market for them at remunerative prices.

I was pleased with a cheap form of running up buildings, particularly intended for cold houses, although quite as useful for heated ones. Perhaps I cannot describe it clearly, but the whole is very simple. One now building, as an orchard house, for example, is sixty feet long and fourteen wide. There are side timbers erected in the ground, four feet apart, and four feet high—the corner ones six inches by four, and the others only five by three. Then a sill is nailed upon the top, three inches by two; the rafters extend from this to the ridge board (the house is span roof), and are twenty inches apart, and three inches vertically, by one and a half in width, with half-inch rebates nailed on the top, into which the glass is set. The sides of the house are furnished with a lid or shutter, to open, up and down, on hinges, a foot or eighteen inches wide, as may be required, while the rest of the span may be glazed above, and boarded below this opening. A two minutes examination of the house would tell better than a long article how to build it, but I thought it to combine more simplicity and cheapness, with neatness and durability, than anything I have seen. The cost of one building a hundred feet long, was only £48, less than $250, while lumber is much more expensive than with us, I believe. I should add, that for additional strength, every third post has a spur extending deep into the ground, and on every third pair of rafters, there is nailed a simple iron tie, to bind them more firmly together. All the glass used in his extensive establishment, Mr. Rivers has in panes twenty inches long,—

preferring this length, which is adapted to the uniform distance between the rafters, to any other; the breadth may vary or not, and is a matter of no consequence.

Mr. Webb's South-Downs and Short-Horns.

Let us retrace our steps a little way, however, or rather permit the train to do so for us; and, six or eight miles London-ward, we shall come to Babraham, home of the South-Down, where, king of a kingly flock, Mr. WEBB this day dispenses the royal blood to all who buy, and solid English hospitality to all who come. At a table in the house perhaps twenty guests are seating themselves as we draw up before the door, to cold beef and ham in large abundance, with ale and wine, and the staff of life, and butter that may be of Durham extraction. As each finishes the luncheon, others seat themselves, and, for several hours, beginning before 11 o'clock, those waiters shall not lack the custom of some hungry visitant tooth. The host himself is missing, and missed; in a private apartment he has been some days occupied with the unwelcome presence of that grim guest, the gout,—and he is hoping while so many others are about him, the least agreeable of all of whom would be a relief in comparison with this which "sticketh closer than a brother"—he is hoping yet to shake off the intruder for a while, and to see his South-Downs off for 1859, as in the thirty-two years that have gone before.

In the interval, until the bidding begins, we shall have an opportunity to see the Short-Horns, of which there are 30 or 40 head at this farm, and perhaps twice as many more on one or two others, for Mr. WEBB farms in all about 1,300 acres of land, only a hundred of them being in pasture and the rest under the plow. Two bulls there are in one stable; "Young Duke of Cambridge," now between three and four years old, whose sire was the old Duke of the same name, and whose dam, "Daffy Gwynne," of the Princess tribe, we shall by and by admire not less for her beautiful head than for the size and symmetry that characterizes her throughout. The Young Duke is excellent in his fore-quarters, particularly, and we turn with interest to see if he is equalled by his companion. This is a bull sired by the "Marquis of Bute," out of the "Countess of Hardwicke," and is scarcely three years old; his name is "Earl of Hardwicke," and he is a sample of Mr. WEBB's breeding, doing no discredit to it. With great length of body he combines fine depth and girth in front; the loin comes well up to the hip, and he is very low in the flank, and long from the hip to the tail. He unites in his sire the blood, if I am not mistaken, of both the Fawsley and Lord Spencer's herds, with that in his dam of Mr. Bates' famous stock. * * *

Mr. Webb gave me a sketch of his herd and its rise and progress, from which I learn that it was first commenced in 1837, since which time it has grown upon his hands until the whole now numbers no less than 140 head. His chief design was, that they should convert straw into manure for his extensive farms—a purpose that renders good feeding requisite. The calves are taken from their dams, and allowed but little milk; all that I saw were coming on well, while their seniors were generally in the best condition,—those intended for exhibition being so particularly rotund, that I am sure some of our advocates for exhibiting only store animals, would have been almost thrown into apoplexy at the sight. I ought to defer speaking of this, however, until after the Warwick meeting, for I doubt if they were any better fed than all their competitors will be, and I am besides assured that "forcing and training for shows," is no part of their owner's plan. We have seen that there are strains of the Spencer, Fawsley and Bates blood among them, and these have been added, from time to time, to several other strains, so that six tribes are included in all. The "Duchess of Gloucester" is a cow for which three hundred guineas has been twice refused. "May Duke" and "Sir Charles," are two young bulls, which I ought not to forget to mention; the dam of the former I have spoken of, and the latter, as well, is of especial merit, and affords great promise for the future.

But we must be making our way to the ring, which is the central point to-day, and we are glad to find that our host has been able to post himself here to superintend, as usual, the course of affairs. The rams, of which about a hundred and thirty are on exhibition, have each a number affixed on either slope of his broad back, and are ranged along for the admiration of the curious, and the scrutiny of the customer. There are lists posted up in sight, giving the age and amount of the last clip of each, together with that important item, the price at which his services are offered to the Agricultural public. An attendant told me that Mr. Webb has about fifteen hundred breeding ewes, and a thousand lambs, and as there are among them five distinct tribes, he never has to go beyond his own resources to secure a change of blood. The ram lambs within a fortnight after they see the light, are examined, in order to select about two hundred of the best of them, to be retained as breeders. Mr. Webb will not sell a ewe in England, but disposes of some to foreign countries, and will not retain in his flock any that do not shear their seven pounds of wool as yearlings. The majority of the fleeces are said to be a pound heavier than this, and among the heaviest carcases that have gone to the butcher, some have reached fifty pounds per quarter.

Of the rams which have been most noted, there is one now five years old, for the use of which during three successive years, 410 guineas in all have been paid, or an average of about $700 a year—a pretty good revenue some of us would think, to get out of any single animal other than a race horse. But there is another which Mr. W. kept for his own use for two years—in order to do so, refusing a thousand dollar offer for its annual services. And 360 guineas was even offered by one person for a year's use of three rams—an offer that was not accepted—and in 1856, at the time of the great Paris Exposition, the Emperor presented Mr. Webb with a testimonial of plate, thus not only expressing his appreciation of the sheep, as he has often done by purchase and hire, but also in witness to the eminent achievements of their breeder.

One gentleman was present from New South Wales, Australia, who had been buying no less than seven Short-Horn bulls, a heifer, and several sheep, from Mr Webb's stock. The ram referred to as having been purchased by an American, was called "Young Salisbury," was sired by the prize ram at the Salisbury Show, and was bought by SAMUEL THORNE, of Dutchess county. Meeting Mr. STAFFORD since then, he informs me that he shipped at the same time with Mr. THORNE'S ram, no less than 30 head of South-Downs for R. A. ALEXANDER of Kentucky, comprising 6 from Mr. WEBB, and the remainder made up in about equal proportions from several others of the most distinguished flocks in England. He also mentioned, by the way, having lately made a shipment of five Short-Horns to J. O. SHELDON of Geneva, and he added that he had never known a more brisk demand for improved stock than exists at this time.

The three points most sought by Mr. WEBB, as a breeder of South-Downs, have been, I believe, weight, early maturity, and hardiness of constitution, combined, of course, with symmetry and some regard to the production of wool. He has met with most flattering success, and although, of late years, other flocks have arisen, perhaps equally worthy of public confidence, he still retains in a great measure the pre-eminence acquired by his early example of improvement. We saw, after the letting was over, a field of three hundred ewes, which for general excellence and some instances of rare merit, were most remarkable. * * *

In the evening, while it was still light, I had the pleasure of accompanying JOHN CLAYDON, Esq., for a day's visit to his farm near Saffron Walden—my notes about which I shall have to retain until the shows are over, with much else, the interest of which will *keep*

well. Returning thence to London, I passed Saturday at Rothampstead Hall, the fine old residence of J. B. LAWES, Esq., widely known as having conducted what are doubtless the most extensive, as well as the most expensive, field experiments ever undertaken, and to whose generous munificence in good works, his neighborhood affords as good testimony as the records of English agriculture do to his labors in this great cause.

Warwick Meeting of the Royal Ag. Society.

The following are extracts from Letter X., giving an account of the annual show of the Royal Ag. Society of England:

With its central position, almost equi-distant from Liverpool, Hull, London, and Bristol; with the fine country of which it consists, and by which it is surrounded, Warwick possesses great advantages of location, and it is not surprising that the exhibition here should rank, as I think it undoubtedly does, somewhat at least in advance of any of its predecessors. Implements particularly are shown in wonderful numbers. In stock I understand that all the classes are considered to be *well* represented, while in some of them the competition is very large and close. Of cattle, the Short-Horns, as *cattle*-ogued, number 163; the Herefords, 89; the Devons, 45; and other "established breeds," a class intended I believe mainly for milking or dairy stock, 23. Of horses, there are 79 "for Agricultural Purposes;" 33 dray-horses, and 38 others, including hunters and hacks. Of sheep, there are 93 lots of Leicesters, 59 of South-Downs, 73 of Long-wooled sheep other than Leicesters, and 122 of Short-wooled other than South-Downs—the last and fullest class being that which comprises the Downs of Hampshire, Shropshire, Oxfordshire, and the West Country. I see but two or three Merinos on the list, and they are also put down under this last class. Of swine, there are 39 lots of a "Large Breed," and 69 of a "Small Breed." Beside the above, which are in competition for the Society's prizes, there are quite a large number of special prizes offered by the Warwick local committee; 10 bulls compete for three premiums on bulls calved during the year 1858; there are 17 entries of "pairs of cows in milk or in calf;" 8 of "pairs of heifers in milk or in calf;" 8 of "pairs of yearling heifers;" and quite a show of the pure Long-Horn breed, including half-a-dozen bulls, and as many pairs of cows. Under the local prizes 56 horses and ponies also compete, in addition to those already mentioned; and there is a class of Shropshire sheep by themselves, including no less than 78 lots, and another of Berkshire pigs, of which there are 36 lots. There are next a few other swine, and then a list of prizes for wool, divided into classes for different breeds, and limited, if I understand rightly the word "teg," to the first fleece taken from the sheep when a yearling. Lastly come some cheese prizes, and this finishes a catalogue of 95 pages in length.

Far more bulky yet is the one which enumerates the implements 450 pages being required to contain a list of the 4,000 on exhibition. There are 245 stands or exhibitors, each of whom shows from one, all the way up, to several scores or hundreds of articles. I remember noticing a stand with articles numbered up to 200; I do not know whether there were any larger lists or not. Implements appertaining to the cultivation of the soil, such as plows, harrows, cultivators, rollers and clod crushers, together with tile and brick machines, and draining machines and tools, were the ones to be tried this year, and a prize of fifty sovereigns was also offered for the best application of steam to the culture of the ground.

Trial of Steam Plows and Cultivators.

As long ago as last Friday, operations began—a trial field having been staked off early in the afternoon for the steam cultivators. Fowler's and Smith's engines, also one not as widely known, Romain's, were located here, on ground described as "excessively hard, from the dry, hot weather," although not what would be called a very heavy soil. "From all appearances it cannot have been disturbed for some years." The last of these appears to have broken down at the end of its first furrow. Its inventor is from Canada, and his machine is a kind of locomotive, carrying behind it a revolving cylinder, upon which spades or cutters break up the soil in a width of eight feet, and so to any desired depth, by turning in a direction opposite to that of the engine, as it moves forward.

On Saturday the other machines above mentioned, with one or two more, were got under way. But Fowler and Smith have brought their engines into a much more perfect state than any of their competitors, and it seemed to be taken for granted that the prize lay between them. Fowler's plowing was a little complained of, as not being well laid, but the condition of the ground was perhaps some excuse. The pace at which it was done was about three miles per hour, and the width of furrow twenty-eight to thirty inches. It will be remembered that the main difference between this machine and Smith's is, that Fowler *combines the windlass*, which drags the plow along the field, *and the steam engine together;* while, on the other hand, Smith uses a *separate windlass*, which any portable engine can turn. Smith, however, does not *plow;* he has a kind of "smashing" process,—I think because he prefers it, for I can see no reason why he should not draw a plow as well as he does a cultivator of any kind. He does not appear to have done quite as well on Saturday as was anticipated; the difficulty being that his "steam-cultivator" left the ground in some places unbroken, so that it would require cross cultivation to be thoroughly done. This I thought to be the case when I saw it at work at Ipswich.

Cultivators, harrows and plows were also partially tried on Saturday.

On Monday, it is said that both the Fowler and Smith engines "passed through a severe test," and accomplished very difficult work.

The result of the day's trial was that these two machines, together with a third, were chosen for a final trial—the third being that of Chandler & Oliver, an engine and windlass combined. In its construction, the drums on which the rope is coiled, are placed on either side the engine, between the fire box and traveling wheels, and are driven by gearing from the fly-wheel shaft. A balance plow is used, making three furrows, and, in operation, the rope that draws it runs along the ground in the form of a triangle—its base being the line of the furrow, while its sides constantly diminish as the work goes forward.

It will be seen from what has been said, that the system of dragging the plow by wire ropes up and down the field, the engine itself not going upon the plowed ground, and only moving along the headland as necessity requires, is the one that seems most likely to succeed—Boydell's and other inventions which act as locomotives, being regarded as too cumbersome and difficult of management. Their weight upon the land is also one of the greatest objections, especially on heavy soils. The price of the Smith machine, without an engine, and adapted for one of 8-horse power, is £205; that of Fowler's 8-horse power is £455 10*s*, of his 10 horse power, £622. There are about fifty sets of the former, (Smith's) it is said, now in use by tenant formers—a fact which, with some others here given, I may possibly have referred to in my letter from Ipswich, although, having no copy, I cannot tell.

Tuesday the Implement Show-yard was open to the public, comprising thirty-two large sheds, ranged side by side at convenient distances, and the open space adjoining them occupied by engines working the various machinery which was to be shown in actual operation. The exhibitors of implements go to great expense in bringing large collections, and they fit up private offices in their stands, where in many instances they keep a luncheon always ready for the benefit of their host of friends. And when they have also to enter an extensive lot of implements or large and complicated ma-

chinery upon trial, the cost to them must be very much increased. One of the competitors, though probably one of the largest, told me that the exhibiting expenses with him would amount to about £1,000. This shows how highly they esteem such a Show as a medium of advertising. They also expect to do a good stroke of business upon the ground. I noticed several farmers giving orders, and a gentleman informed me that the largest houses sometimes sell during the days of the meeting, four or five thousand pounds worth of their manufactures.

Trial of Mowing Machines.

Tuesday, moreover, the field trial proceeded, including scarifiers and plows. There was also a trial of mowing machines, in which two of the three contestants were American machines, viz., Wood's and Allen's, and the other the invention of an English patentee named Harwood. I saw Wood's in operation upon Prince Albert's farm at Windsor, in a very unfavorable field of soft and considerably matted grass, when, as might be expected, it could not cut as closely as it otherwise might, and since then I have seen one or two gentlemen who have used it largely, and to their entire satisfaction. Allen's seems to be a decided success, so far as I can learn—many who have seen it in operation, preferring it to all others yet introduced.

Draining by Steam.

FRIDAY MORNING, *July* 15.

Among other machinery tried on Tuesday, was Fowler's Draining Plow. It is the same, I think, which was brought forward several years ago, but formed to require greater power to operate it than that of any ordinary team. Now that steam is being applied to draft-work on the field, it is thought that this means of laying tile may be more successfully and economically employed. The agent of the manufacturers assured me that they were willing to undertake, by contract, the draining of any land, and to perform their work to the entire satisfaction of the owner. As the reader may remember, a cutter cuts its way through the ground, say three feet below the surface, and a mole at its point leaves behind it, as the machine proceeds, a tubular hole, into which, at the same time, it draws the pipe tile used here almost exclusively in place of the *horse shoe*, and other shapes in vogue with us—these pipe tile being strung upon a rope for the purpose of pulling them into place under ground. The exhibitors also showed a windlass of their own patenting, for the purpose of operating the Draining Machine with the aid of any portable steam engine.

Warwick was gaily decorated on Tuesday, as it was the opening day to the public. The price of admission (to the implement-yard only) was half-a-crown, say 63 cents, and about 1,700 persons, according to the published statements availed themselves of the opportunity to contribute this sum to the Society's treasury. In the afternoon were announced the implement prizes, Messrs. Hornsby & Sons, Ransome & Sims, J. & F. Howard, and other names less familiar across the water, being prominent among the prize-takers for plows, harrows and cultivators, Fowler getting the £50 for his steam apparatus, and the Messrs Eddingtons £15 for the Fowler draining plow and windlass, referred to in the last paragraph, of which they are manufacturers. Burgess & Key had a silver medal for Allen's Mower.

On Wednesday morning, the implements were open to the public at the same price, and, shortly after one o'clock, the judges on stock having all completed their labors, that part of the show was opened at an additional charge of $1.25, so that those who were admitted that afternoon had paid altogether nearly two dollars for both branches of the exhibition. I mention this particularly, as a proof how many there are in this country who do not grudge the expenditure of five or ten shillings sterling on such an occasion, perhaps not merely for the sight of the show itself, but knowing as they do that they are thus placing additional means of usefulness in the hands of the Society, and willing and glad so to contribute to its prosperity. I have somewhere seen a statement of the number who paid for admission to the stock-yard this day, but cannot now find it. I was a little surprised that there was so many, and was inclined to wish that our societies at home might receive more of such liberal support.

On entering this part of the grounds we found the prizes already posted above the fortunate animals, and each surrounded by crowds of admirers or critics. But I must close for the present, with the view of writing again, in season for the next steamer after the one which carries this, and perhaps in time to add the remainder of my imperfect account to this hasty beginning. I may add, however, that yesterday was a fine day; 19,900 visitors entered the grounds—the account being accurately kept by a kind of turn-stile, that registers of itself every person who passes. Wednesday there were 8,530 admissions. The arrangements are generally good, and the existence of catalogues, and the stands for the sale of them in all parts of the grounds, are a very great convenience. The weather could not have been more glorious, although verging in heat somewhat upon the temperature of one of our own Julys.

Norfolk Farming—Holkham.

NORWICH, JULY 18, 1859.

Since I wrote before I have been looking at some of the famous Norfolk farming, and I shall hope as time may permit hereafter, to give you some idea of what I have seen. It is a county noted for light lands and heavy crops; donkeys and fat cattle; drained fens and blowing sands; a poor soil and high improvement; plenty of game but little breeding; the cleanness of its culture, the extent of its wheat fields and the numbers of its flocks. If I could tell you now all that I have learned in visiting C. S. READ, Esq., near this place—the author of several prize essays, published in the Royal Ag. Society's Journal—Mr. FULCHER, the active and intelligent steward of Lord SANDES; the farms of JOHN HUDSON and his son, the noted Castle Acre agriculturists, and, last but not least, ROBERT LEEDS, Esq., who is one of the most enterprising and thoroughgoing specimens of the English tenant-farmer I have yet had the pleasure of meeting,—you would understand still better the pre-eminence Norfolk enjoys among the best farmed counties in the kingdom. I had not a day to spare to visit the home grounds of the Holkham estate, owned by the Earl of Leicester. You will at once remember that it was the father of the present Earl, who, under the name of Mr. COKE, as well as afterwards under his later title, accomplished so much for agricultural improvement, and paid so much attention to the Devon breed of cattle. The Patterson stock with us, was obtained from this source. I came as near to it as this: twenty-four miles drive, all of it *through this property*, would have taken me to the Hall. The revenue which such a district of farming land yields to its proprietor, is of course beyond any idea of riches to which we have yet attained, even from the successful manufacture of patent medicines, or the more sterling pursuits of commercial life; I heard various estimates of it, ranging from sixty to eighty thousand pounds, that is to say, *from three to four hundred thousand dollars a year*. If any reader is inclined to sympathize with his lordship in the condition of penury represented by these little figures, I might add that he has other very extensive property, so that one might suppose there would be, in his case, less difficulty in contriving how to raise the money he wants to spend, than in accomplishing the expenditure of the income he enjoys.

Mr. Sanday's Ram-Letting.

LINCOLN, ENGLAND, July 21.

Yesterday I was present at the Letting of Leicester tups at Holme Pierrepont, near Nottingham, and I take an odd moment to give you a part of the result—a part only, for the train forced me to leave before the whole was quite concluded. This farm has been noted under

its present occupant, Mr. SANDAY, as well as under his predecessor, Mr. BURGESS, many years for its Leicester blood, and correspondingly high prices have been paid for the use of rams from a flock so deservedly distinguished. This year there were offered 28 shearlings, 19 two-shears, 8 three, 5 four, and 3 five-shears. Of the first 28, six were passed, (not let,) and the remaining 22 brought 721 guineas, being *an average per head* of £34 8*s*. Of the 2-shears, 9 were not let, and the other 10 realized 286 guineas, or a fraction over £30 each. At the time I left, 3 only of the 3-shears had been let, two at 50 guineas each and one for 12 guineas. There were two others, one a shearling (20) and the other a 2-shear (11) let for the same sum, and several more approached it. There were only three let for more than 50 guineas (say $250) each—No. 27 shearling for *ninety*, No 26 for *seventy*, and No. 19, 2-shear, for *sixty one*. Mr. TORR of Aylesby, near Grimsby in this county, with whom I came away from Holme Pierrepont and have been spending the day, was the the taker of the 70 guinea ram, in preference from its larger size, I think, to the one that was let for 90. The latter took the 2d and the former the 3d prize at the Warwick show.

Farming in Lincolnshire.

The following extract are from Letter XI, dated

BOSTON, LINCOLNSHIRE, July 25.

In the train on the way thither, I had some conversation with a Lincolnshire farmer, whose "occupation" was situated some miles to the westward of my destination. He gave me a number of interesting facts in relation to his pursuit, and the general system of the neighborhood. He farms 850 acres, and it is this year employed about as follows :

170 acres of wheat,	30 acres of oats,
150 acres of barley,	160 turnips and mangolds.
340 in "seeds," *i e*, clovers, &c., &c.	

The "shift" or rotation, as would be inferred from this division of the land, is five-course, that is, the land is kept two years in clover, ray-grass, &c.—a crop of mixed "seeds" which is called here by that name exclusively, and in which clover always predominates when the land is not "clover sick." The wheat is followed by roots, the roots by oats or barley, these grains by the two years of mowing or feeding, and then comes around again the wheat. Mr. A. feeds a hundred bullocks and about a thousand sheep; this year indeed he clipped over 1200 fleeces, and seemed a little proud, too, of the fact. Such is the animal machinery by which production must be maintained—the feeding which supplies the midland cities of Manchester and Leeds, with beef and mutton, and enables northern Lincolnshire to send them also quantities of wheat as well as to furnish Burton with the vast weight of barley she annually malts and brews.

The wool of the Leicester and other similar breeds has been an important item in farm receipts of late. Mr. A. thought his flock had averaged a yield of about eight pounds weight throughout, and the price obtained had been from twenty to twenty-two pence per pound, say about 40 cents. He had hired a ram or two of Mr. SANDAY, and had been a bidder at a high rate on others.

I think it was with this gentleman that I spoke particularly of the practice which some of us have advocated and others decried so strongly—that of spreading the manure upon the wheat-lands sometime before plowing up the stubble of the clover crop, and permitting it to remain in exposure. There are many in this country, at any rate, who constantly practice this way to advantage, as I am assured, and consider that, in no other, can greater benefit be obtained. It helps, in some extent too, to bring forward the "seeds," so that when they are ready to plow a few weeks later, there is a closer and thicker sward to turn over, which will of course yield the greater nourishment it has thus been accumulating, to the coming crop of grain.

Mr. Torr's Farming—Aylesby Hall.

The land occupied by Mr. TORR, in looking over which I spent the next day, varies considerably in character, but is generally rather strong, underlaid by clay or chalk, and capable of yielding quite remarkable crops under good management. The system followed is, generally speaking, the four course shift, although Mr. T. does not bind himself to it, and varies it by occasionally putting some fields in wheat that would naturally come under a barley crop, thus increasing the area covered by the former, without ever taking two white crops in succession.

Upon his land he finds that to manure for the wheat causes frequently too much luxuriance of growth, and he consequently prefers to manure mainly or entirely for the root crop. Not only is the immense bulk of straw which he converts into fertilizing wealth, thus employed, but he also spends liberally for oil-cake, guano and superphosphates—buying to a great extent, in lieu of the two latter, a kind of "blood manure," which seems to be now in quite general esteem—and his bill, he told me, for the past year for these materials was in the neighborhood of $10,000, (£2,000)

The wool he clipped this spring, however, would have sufficed to cover no immaterial proportion of this large sum, for he sheared no less than two thousand sheep. The extent of business incurred in the management of such a farm, may also be estimated from the disposition of the land and the crops it returns. There are about 500 acres in permanent grass, and the other 1600 are divided into wheat 500, barley 250, oats 100, roots 415, and seeds 335. Last year the wheat crop was a very good one, and averaged throughout this large surface nearly 40 bushels per acre; Mr. T. estimates his average, bad years with good, not far below this figure—perhaps at 36 or 38, while he considers the average of all Lincolnshire as varying from 30 to 32. Two adjoining fields of his best wheat aggregating 67 acres, averaged, all through, full 48 bushels, and of the barley there were 28 acres which produced 183 quarters, that is six and a half (52 bushels) to each.

Mr. T. annually shears about the number of sheep mentioned above, but they do not comprise his whole flock at this time, which included about a thousand breeding ewes, the same number each of yearlings and of lambs, and perhaps a hundred tups. He is to have his Annual Show and Letting on the 7th of September, and will probably reduce his stock before winter about to the usual numbers. Having so much land in permanent grass, he is enabled to graze through the summer to almost any desired extent. He generally disposes of about 400 fat sheep per year, and the rest of those he breeds are sold I presume to other breeders who require them, or some perhaps to other farmers simply for feeding purposes. In the summer he also grazes a few bullocks, but does not feed beasts to any extent in winter, because generally his Short-Horn herd is large enough to consume, with the sheep, all the hay and straw he has to give them.

The mode of applying the manure to the turnips, is to open a furrow where each row is to grow; in this the "muck" or farm-yard manure is thrown, and, upon it, from one and a half to two cwt. to the acre of guano; after a covering of earth has been turned over this with the plow, the seed is drilled—the machine dropping at the same time with it, from four to eight bushels of ground bones per acre as the case is thought to require, mixed to a bulk of about 24 bushels per acre with sod ashes. These sod ashes or charred earth, play a most important part in Lincolnshire agriculture, and appear to be in almost universal use upon the root crop, whatever other applications it may or may not receive. Between 50 and 60 tons of guano were used last year, at a cost of £12 to £14 per ton; and 330 quarters (8 bushels each) of bones ground, I was given to understand, to what is called the half-inch size, and costing about £1 per quarter.

The cost of labor in the country generally, is about two shillings sterling per day; the men who care for the horses are taken under a different way from other laborers, and are generally what is called "confined"

hands; perhaps they have a cottage furnished, and receive a further part of their wages in kind,—altogether, at any rate, getting a considerably higher sum than others, partly because their services are necessary, more or less, all seven days in the week, and partly because they occupy a position of more responsibility. One such man is engaged to every four horses, and if my memory serves me, there are employed upon the place forty or fifty horses—it may be rather above the latter figure even.

Mr. T.'s land, with probably the sole exception of the "Riby farm," is situated similarly to, if not actually included in what is called the "fen district"—a district not requiring here the machinery of wind-mills and steam to effect its drainage, as it does on some parts lying lowest and nearest the sea; but much the better for a judicious under ground dressing of pipe tile. Indeed, my host looked upon the introduction of *deep* drainage as one of the greatest agricultural improvements the last few years have seen; while in early times of draining, two feet and a half was considered ample, four feet is now reached wherever circumstances admit, and Mr. T. has on one of his farms about three hundred acres, all underlaid at this depth, at a cost of about fifteen hundred pounds sterling. It is such fen lands, when well drained and properly managed, that will return, in a fair season, the largest wheat crops compatible with standing straw—they may be allowed to get into such a condition that the straw will never stand and, of course, the great end is to hit that medium which runs between too great luxuriance of growth and too little fertilizing material to admit of the fullest and thickest heads of grain. Two hundred weight of salt per acre may be applied to strengthen the straw, and if thought best, one and a half hundred weight of guano - or if the land will bear it, two hundred weight of guano and a proportionably larger amount of salt—either put in at the time of seeding in autumn, or sometimes sown broadcast in spring.

I do not know that I have as yet spoken of that feature in English farming, which is so universally praised, and which forms such an important item in the cost of production—I mean, the often almost entire cleanness of the soil from weeds. I do not refer to it he e, because I saw in Lincolnshire any cleaner fields than in some other counties. It is this which gives rise to the frequent comparison of the farms of England to the garden-cultivation of other countries. To see fifty or a hundred acres in a field of turnips, or twenty or thirty in mangolds, each separate plant as long as it is young, with as clear a space of well worked soil around it as if there was no other in the field, and when it grows old enough for its leaves to meet those of its neighbors in the rows around, covering over all the land with an unbroken shelter of its own - this is the perfection of farming, because it accomplishes on a large surface all that could be done on a little plot, and, if not always attained in fact, is certainly more nearly approached by the English farmer than by any other. He will undertake any labor that may be necessary to get the field rid of every vestige of the intruders upon its riches, before he sows his seeds. Particularly are the roots of the *quack*—that most pestilent and long-lived of evil grasses, carefully raked out and burned. After the young plants appear, the horse-hoe and grubber are freely used. As soon as they reach a more advanced stage, they are "set out" by the hand-hoe, and here again any odd burglar that may have effected a secret entrance may be at once despatched. This "setting out" consists in one stroke of the hoe-blade, which may be eight inches wide, across the row, leaving a tuft of several plants at every interval; a gang of children generally following to single out all but the strongest one. Much care is taken to single the mangolds completely, but with turnips many go no further than the first operation, not objecting to allow a number of the plants to remain together. The wheat is often horse-hoed, either in fall or spring, and frequently just before earing out, children go through it to pull every stray stalk that don't belong there, and spud out the thistles.

Cattle and Sheep.

Mr. TORR's predecessor at Aylesby Manor, was Philip Skipworth, who established the flock of Leicestershire sheep, having obtained some Dishley bred ewes, it is said; and, about 1810 or 1812, such was the fame of this highly improved breed—having given the extravagant price of 600 guineas for the use of a single ram—an awful figure indeed, but exceeded by the combination of four of his neighbors to make up a thousand guineas for the hire of another ram "of the same sort." It is now about 70 years since the flock was commenced, and its breeders have successively manifested a similar determination not to be outdone in securing the best, and as constantly exercised their own judgment in preventing its deterioration. The farm came into Mr. Torr's hands in 1848. This year at Holme Pierrepont he was the hirer of the 70 guinea ram, the only one which went higher having been taken to Ireland. As we stroll from paddock to paddock where the rams are grazing, we shall find that they are generally a little larger in frame than the SANDAY flock, as though the air of Lincolnshire, or perhaps a touch in the foundation blood three or four score years ago, had brought them a little nearer to the style of sheep indigenous to the country. The sheep of Lincolnshire as they now exist, are doubtless almost universally tinged with Leicester blood, and this in a greater degree I observed on the low than on the high lands—the latter preferring to adhere more to the old type, and inclined to think it the only one at all suited to their wants.

As to Short Horns, Mr. TORR is entitled to precedence for extent of herd, while he has not many rivals in its character. He numbers at present 120 females, and 26 bulls, young and old. He is disposed to swear by Mr. Booth, in all Short Horn matters, and thinks the cow "Bracelet," and bull "Duke of Northumberland," never surpassed in all the pedigreed members of this now widely-spread breed. There is a noticeable proportion of handsome roans in this herd, and not a few of them fully able to back their color with all desirable style and substance. It is fifteen yeare since Mr. T. began, in 1844, to hire exclusively from Warlaby; paying for the services of the bulls from 60 up to 200 guineas each, and including among them "Leonard," "Baron Warlaby," "Vanguard," and other good stock-getters. The last was in use for seven sensons, and forty or fifty out of the hundred and eighty calves he bred, still bear witness to their parentage. A half dozen of noble bovine matrons are left among the best fruits of the Warlaby blood, their sire having been the "Baron" of that ilk. Indeed, of all the cows and heifers, there are but eleven which don't trace back their origin to Booth bulls, and not one of them not included in the trio mentioned above. "Hopewell," by name, is the father of a tribe of twenty or thirty daughters, and several particularly nice young sons. Take, as an example of the latter, his breeder's especial pride, "Booth Royal" and "Golden Hope," both fourteen months old, and "Gay Hope," still younger, his blood particularly precious to the initiated in geneological mysteries, for in it are mingled that of a whole quartet of Boothian bulls.

The Royal Irish Agricultural Show.

DUBLIN, July 29.

I have only time to add by way of postscript, that this show has duly taken place at Dundalk, a seaport town of some 10,000 inhabitants, a little more than fifty miles northwardly. The exhibition of Short-Horns included, as I expected, some very good stock. Other breeds were not largely represented—with the exception of a small Hereford display. Sheep and swine were limited in numbers, but fair—especially the Long Wooled sheep. There was not a large show of horses. That of Implements was extensive and good. I will write soon with more particulars. but this must take the mail immediately. L. B. T.

Inquiries and Answers.

GRAFTING AND BUDDING GRAPES.—Having purchased some vines last spring (1858) which have turned out wild ones, would it be advisable to bud on them a good variety? If so, please explain process. Should it be done on last season's wood or on the old stock, and what season of the year? OLD LONG ISLAND. [The grape is usually propagated by grafting—which is done in spring immediately after the leaves begin to expand, the grafts having been cut before the commencement of growth. On account of the furrowed surface of the shoots or stems, and the want of the accumulation of cambium, buds do not succeed well.]

GUANO ON CLAY AND SANDY SOILS.—Almost all experiments with Peruvian guano in this vicinity, are failures on clay soils, while those on sandy loam, or lands very sandy, are successful and yield good crops. Can you or any of your numerous correspondents, explain the reason? JAS. CHILDS. *Deerfield, Mass.*

CHINESE SUGAR-CANE SYRUP.—I noticed an inquiry in your paper some time since, as to whether molasses made from the Chinese sugar-cane would keep good through the summer weather. Not having seen any answer to the above, I will state that we have some on hand which was made last fall, which is as good as when first made, showing no signs of souring or spoiling any way. I am certain that if properly made, it will keep through the hottest summer weather. We made about two hundred gallons of excellent molasses. If it would be acceptable, we will furnish you with our method of making, for the benefit of your readers. IRENE COLE. *Flowerville, Ind.* [Your directions for making the syrup, will be very acceptable.]

MANUFACTURE OF VINEGAR.—I wish to know if any of your correspondents can give me any information to prevent flies from boring through barrels that are in the hot sun full of vinegar? Can any paint be made up with any article, in which to prevent them? I wish to know how to make a cement to put around the heads of barrels, to prevent leaking, and the best article to make cider made of molasses turn to vinegar in two or three weeks time. M. D. MILLER. *Athens Co*

RAISING GRASS SEED.—Will you in your next issue of the "Country Gentleman," inform me how to secure grass seed. The grass seed of the shops, in my case, "turns up," as a general thing, *weeds*. We think we are very poor farmers, though abundantly green, no doubt, in one sense of the word. A. L. MILBANK. *Northampton, Mass* [Select such meadow (usually best when rather new) as affords the grass without weeds; allow the seed to become nearly ripe—it will ripen somewhat after cut—when thoroughly dry, thrash it, and pass it through a good fanning mill. A good and suitable screen will separate the chaff, &c., and deposite the seed in the box.]

WHEAT AND CHESS.—Having read with interest the various investigations in reference to wheat turning to chess, and being a firm disbeliever in such transmutation, my faith has been somewhat staggered this evening, by being shown a head of wheat, bearing both wheat and chess, having all the appearance of being firmly attached. The chess has sprouted and grew out from the wheat near the lower part of the head, and appears to be as much a part of it, as any of the grains of wheat composing the same. The gentleman who has shown it to me, wishes to claim the $500 reward offered for evidence of the transmutation of wheat to chess, and believing that the sample before us now comes nearer a demonstration of that propositoin than anything that has ever been produced, wishes to know through your kindness, more particularly how to proceed in the matter. Will you be so kind as to inform me in reference to the reward, and the necessary evidence to obtain it, if it is still offered, and by whom it is offered ENOS HOOVER. *Frankfort, Ind* [We are sorry to disappoint our friends about the $500; but if they will take the trouble to examine their head of wheat carefully, they will see by bending down the chaff directly under the chess, that the chess did not grow out of the wheat head, and that there is no actual connection between the wheat and the chess, the latter being held in its place only by the pressure of the wheat upon it. We have seen a number of such heads, and it never took over a minute to convince those who presented them to us, that the chess did not grow on the wheat plant.]

SAVING ANIMAL MANURE.—Will you please inform me through the columns of THE CULTIVATOR, the best method of reducing animal substances to manure. This is a subject which interests every farmer of the middle and eastern states. On every farm almost there is more or less loss in rich materials, which should be turned to a good account in enriching our soil. Every farmer is liable to the loss of cattle, sheep and hogs; those carcasses should be turned to a better account than burying them in the ground merely to get them out of sight. J. D. *Forestville. N. Y.* [If the dead animals are buried well, on the surface of the ground, by heaping over them turf, loam, or peat, this covering material will become very rich in the course of a year or two, the flesh in the mean time entirely disappearing by absorption; this process would be much hastened if the carcass were previously divided into parts. The enriched earth may then be directly applied as manure, or worked into compost with barn manure.]

SEEDING KNOLLS TO GRASS.—I would like to ask you if you have a recipe for a salve which shall hasten the formation of a "cuticle," and even a beautiful crop of green "hair," upon the hitherto bald heads of my pasture knolls, made so by the merciless scalping knife of its former owners. My handiest ingredients are muck, *ad libitum*—manure, *un parvo*—gas lime—salt, *quantum sufficet*—labor, &c. JOSEPH A. STUART. *Dracut, Mass.* [Our surgical friend does not inform us the extent of the injury—whether the turf only has been pared off the knolls, as the comparison to scalping would indicate, or whether all the fertile soil has been removed, leaving nothing but sterile subsoil. In the former case apply a compost of muck and manure this fall, and sow and harrow in grass seed very early next spring, at the rate of a bushel per acre, or three or four times the common quantity. This will make the grass grow as thick as hair. If there is only a sterile subsoil, apply more muck, with some manure, and work these partly into the soil by plowing, and next spring sow as before.]

ARTESIAN WELLS.—What apparatus is requisite to bore an Artesian well? What is the probable cost per 100 feet? Does it require a scientific man to oversee the operation, or can any man of good judgment and common skill guide the works? Is it probable that water may be obtained at any depth on the summit of one of the highest hills on Long Island? A. W. DAY. *Deer Park, L. I* [Will some of our correspondents please answer the above by giving the practical details?]

HESSIAN FLY.—Inclosed you will find six or eight insects, that are destroying considerable of my winter wheat, by eating off the stem near the roots. I have found four or five at work around a single stalk. The wheat prematurely severed from the root, falls to the ground or lodges on the surrounding stalks. Besides the damage done the grain, it will make the work of harvesting the remainder very unpleasant If you can inform me of their habits, name, and whether or not they are something new to shorten the farmer's harvests, you will oblige IRA E. SHERMAN. *Delaware Co, N. Y.* [The insect is the Hessian Fly; the specimens sent being in the "flax seed" or proper state. The best remedy is to burn the stubble, and give high cultivation, as stout crops will best withstand the attacks of this insect.]

CHIP-MANURE.—To what special purpose, and in what manner can it be most profitably applied? Will it answer to add it to the manure heap, or first to re-

duce it to ashes? An answer will oblige TYRO. [Chip-manure, unless very fine, should be allowed to rot in a moist heap—it may then be applied to the compost heap. It is useful for heavy land in rendering the soil more loose—and to any soil deficient in vegetable matter. To be useful, it must be well worked with the soil. It would not be best to burn to ashes, except for soil largely supplied with vegetable mould.]

BONE MANURE.—What shall I do with my bones? Being in the retail meat business I can save a considerable quantity of bones, and buy any quantity at a low price, which I would like to make into superphosphate, if I can do it so that the article will be worth transportation to Massachusetts—cost, say, $8 per ton. Are they most most valuable charred or burnt only, or dissolved raw? I propose to mix with the bones, charcoal dust leached with urine, instead of guano. What would be the value of an article made in this way, compared with the best kind in market; and on what crops, and what kind of soil would it be most beneficial? Would spoiled meat mixed with charcoal dust, make a compost worth transportation at a cost of $8 per ton? F. S. BARLOW. *Newark, N J.* [We are unable to state the actual cost of superphosphate of lime, made by dissolving crushed bones in dilute sulphuric acid, according to the process which we have occasionally described in former volumes, and including the labor—but as the best made article is considered worth some $50 a ton, the manure would probably be worth transportation and manufacture. It is better not to burn the bones as the heat expels a part of the valuable matter. The proposed additions would be good, and add to the value, and it would be probably about equal to the best in market, *if well manufactured*, all the bones well dissolved, &c. Spoiled meat mixed with charcoal would make a valuable manure, worth more than the cost of transportation.]

DISEASE IN COWS.—I have a three year old heifer, in milk a year, in high condition, which is affected mostly on the neck and head, with the hair coming off in round spots, half to an inch in diameter. The spots are whitish, dry and scaly. What is the name and remedy for this, and is it contagious, as another of same age is beginning to exhibit the same? An answer to the above from some of your readers will greatly oblige. J. A. *Waterbury, Conn.* [This may be a modified form of mange—if so, it is contagious. We have had no experience with the disease, but are told the best treatment is to curry off the scurf, and then apply a mixture of lard and sulphur.]

FRUIT CULTURE.—I want to go into the fruit-raising business—live 75 miles from St. Louis, on the line of a railroad. Will you be kind enough to inform me, whether I could make it profitable living at that distance from a good market? If so, what kinds of fruit would you recommend or advise planting? Please answer through the THE CULTIVATOR. SUBSCRIBER. [Proximity to large cities give fruit-raisers the advantage of a market for early and perishable fruits, such strawberries, raspberries, peaches, &c. These fruits are sometimes sent greater distances to market on good railroads, but the extra packing, cost of conveyance, &c., are drawbacks. The less perishable fruits, as apples and pears, are easily sent long distances. We cannot speak with confidence of the sorts which may do best in that region, as experience in each locality may give different results, although all the small summer fruits will unquestionably succeed, and some varieties of pears, peaches and apples—but more experience is wanted as to which will be most profitable there.]

EGYPTIAN GRASS.—Enclosed I send you a sample of grass which I have found growing in several door-yards in this vicinity. It seems to be a good, permanent lawn grass, forming a thick dark green mat, and continuing green almost the entire year. It has not been affected by the recent dry weather, while blue grass has been considerably dried up. It is now just in blossom—has from two to four seed prongs at the top of the seed-stalks as you observe, with a unique, pretty appearance. It is said to be highly relished by stock of all kinds. It is not described in any work that I have. Do you know its name, or anything of its qualities? L. D. MORSE. *Allenton, Mo* [This grass is *Dactyloctenium Egyptiacum*, (the Chloris mucronata of Michaux,) and is supposed to be an introduced plant. It is described by Gray. We are not acquainted with its value for a crop.]

CANARY GRASS.—Our correspondent at Otego, N. Y., is also informed that the grass sent is the *Phalaris canariensis*, or Canary grass, which comes up from the scattered grains used in feeding canary birds, and is thus becoming naturalized.

OLD AND NEW GRASS SEED.—Do you think red grass seed of last year's growth, would vegetate about as well as that of this year's growth, if sown this fall? If so, I should prefer it, because of its larger, plumper seed, the season this year being very dry. C. [We have never found two year seed equal to freshly raised, and if the new is well ripened, would prefer it in value. Our correspondent would do well to try the experiment, by taking say 100 seed of each, and sowing them in rich mellow soil in boxes, half an inch deep, and keeping constantly moist and *shaded*. A few days will determine the relative value. The experiment will be worth more than its cost, and if reported and published, would be interesting to many readers.]

MUSKRATS.—In the Country Gentleman, July 21, 1859, I. C. inquires, "what is the best way to stop muskrats from cutting off corn?" Insert double tape safety-fuse into their places of abode, and fire one end; as soon as fired stop up the hole, and the muskrats will think the "devil" is not 30 feet from there and leave. A READER OF THE CO. GENT.

CANADA THISTLES.—I notice an inquiry as to when is the best time to cut thistles and alders to kill them. My recipe is as follows: Cut or plow them the three days before full moon in June, or the three days next previous to the last quarter in August. The reason given for its killing them is, that the sun and moon are in opposition. Not being troubled with alders, I have never tried it on them, but there will be but very few thistles grow after cutting them. H. G. W. *Fleming, Cayuga Co, N. Y.*

DISEASE IN SWINE.—In the Country Gentleman of Aug. 4, I notice that "A Practical Farmer" complains of a disease among swine, &c. It may possibly be not generally known that there are holes in the fore legs of a hog, and that one or both holes will sometimes become filled up with a kind of glutinous matter, caused probably by keeping the hog too long in the pen. Judging from the description your correspondent gives of the disease he speaks of, I should think that and the one I have reference to, were the same. A knitting-needle, or any similar instrument, run in the holes to open them, will perform a cure; the hog will die if this is not done. J. *Hudson. N. Y.*

ANNUAL REGISTER.—Have you the Annual Register, all the numbers bound in one or two volumes, and at what price? P. B. C. *Amelia C. H., Va.* [We have issued a new edition of the first three numbers under the title of "RURAL AFFAIRS,"—price $1, postpaid by mail—and it is our intention to issue a similar volume every third year hereafter.]

ACORNS FOR HOGS.—Why is it that after hogs are fed on acorns for weeks, they will not gain any for about as many weeks after being put upon corn? I have killed hogs from the woods, when their inwards were completely black. This no doubt is caused from the stringent nature of acorns. Can any of your subscribers tell what would be good to feed porkers, before put on grain. WOLVERINE.

☞ Can you or any of your subscribers, inform me how to plant the hickory nuts to cultivate the plants for hoop-poles? I have heard of its being done, yet I never saw them cultivated. A. W. DAY.

Notices of Exhibitions.

N. Y. State Fair.—In a brief paragraph a few weeks ago, we called attention to the progress of the preparations being made for the forthcoming State Agricultural Exhibition near this city, and we believe the importance of and interest in the subject will justify further notice at this time. The fair is to be held above this place, on the Troy road, on the same ground where it was when the state exhibition took place here several years ago. The location is a very fine one, and in every way all will be done that can be, to render it pleasant and agreeable. The railroads and steamboats will, as usual, carry free all articles designed for exhibition at the fair. In the August number of the Journal of the Society, Secretary Johnson says: "From the evidences before us, we are warranted in saying that the approaching Fair will be one of the best the society has held. Not only from our own state, but from the New England states, the exhibition promises to be larger than any held by the society." We hope our farmers will attend in large numbers, as the gathering will be a pleasant one; and the meetings for agricultural discussion will be productive of great good to those who can be present.

The American Institute.—The Institute, under the direction of an efficient Agricultural Board, are to hold a general agricultural exhibition, at Hamilton Park, 3d Avenue, on the 21st—24th days of Sept. Liberal premiums are offered for domestic animals of all kinds, implements and machinery, and $1,000 is appropriated for discretionary premiums for steam plows and other steam farm machinery, and it is hoped that Mr. Fawkes will be present with his steam plow. Great efforts, we are informed, are making to get up an exhibition worthy of the Institute and the country.

U. S. Agricultural Fair.—The seventh annual exhibition of the United States Agricultural Society will take place at Cottage Grove, just south of the city limits of Chicago, Ill., commencing on Monday, September 12th, and continuing until Saturday, 17th. Twenty thousand dollars are offered in premiums, and competition is opened to the World. There are over forty acres of ground inclosed in the grove, containing one thousand tight-roofed stalls and pens, with six handsome and commodious halls, fifty by one hundred and fifty feet, and other accommodations of the most complete and ample description. For premium lists, and all information in regard to the fair, application should be made to the superintendent, Horace Capron, at the Tremont House, Chicago, Ill.

Vermont State Fair.—The ninth annual exhibition of the State Agricultural Society of Vermont, will be held at Burlington, Sept. 13-16th. Arrangements have been made with railroads in the State, and also with steamboats on Lake Champlain, by which articles for the fair are to be carried free, and visitors at half fare each way. The exhibition promises to be a favorable one. Henry S. Morse, Superintendent.

In addition to this we learn that the Annual Address is to be delivered by Hon. N. P. Banks, which will be on the third day of the Fair.

Union Ag. Society.—We have received from G. S. Walker, a circular of the premiums to be awarded at the Union Ag. Society—formed by the towns of Lorraine, Adams and Rodman, in Jefferson county—to be held at Adams, N. Y., September 15th and 16th. Our thanks are presented for the liberal number of the Co. Gent. offered as prizes.

Exhibition of Horses.—An International Exhibition of thorough and native bred horses will be held at Buffalo, N. Y., September 6-10, at which time premiums of one thousand dollars will be awarded for the several classes usually given at such exhibitions. The arrangements are full and complete. A public sale of stock will take place on Saturday, 10th, the last day of the exhibition, by auction or otherwise. The treasurer will pay the premiums awarded, at the office on the grounds, at the closeof the exhibition. All entries must be made in the name of the owners, previous to September 6th. The officers of the "International Association" are, President, C. J. Wells; Secretary, Warren Granger—who may be addressed at Buffalo. Competition is open to the United States and Canada.

Bourbon Co. (Ky.) Ag. Society.—We have received the circular and premium list of this Society, the twenty-fourth annual fair of which is to be held on the grounds of the Society, near Paris, Ky., Sept. 6-9th. B. J. Clay, President; A. M. Brown, Secretary.

Circular of St. Lawrence County Ag. Society. Eighth Annual Fair at Canton, Sept. 28–30.

Premium List of Queens County Agricultural Society. Fair at Hempstead, L. I. September 15th.

Circular of American Institute. Thirty-First Annual Fair at Palace Garden, New-York City. Will open Sept. 21 and be closed Oct. 28.

Christian County (Ky.) Agricultural and Mechanical Association's Premium List. Fair at Hopkinsville, October 12—15.

National and State Fairs for 1859.

United States Society.

Exhibition,	Chicago, Ill.,	September 12—17.
American Institute,	New-York,	Sept. 21—Oct. 28.
International Horse Fair,	Buffalo, N. Y.,	Sept. 6—10.
Nation'l Horse Fair,	Kalamazoo, Mich.,	October 11—14.

States.

Alabama,	Montgomery,	November 15—18.
Canada West,	Kingston,	September 27—30.
California,	Sacramento,	Sept'ber 27—Oct. 6.
Connecticut,	New Haven,	October 11—14.
Georgia,	Atlanta,	October 24—28.
Illinois,	Freeport,	September 5—9.
Indiana,	New-Albany,	September 26—30.
Iowa,	Oskaloosa,	September 27—30.
Kentucky,	Lexington,	September 13—17.
Maine,	Augusta,	September 20—23.
Maryland,	Frederic City,	October 25—28.
Michigan,	Detroit,	October 4—7.
Missouri,	St. Louis,	Sept'ber 26—Oct. 1.
New Hampshire,	Dover,	October 5—7.
New-Jersey,	Elizabeth,	September 13—16.
New-York,	Albany,	October 4—7.
Nebraska Territory,	Nebraska City,	September 21—23.
Ohio,	Zanesville,	September 20—23.
Pennsylvania,	Philadelphia,	September 27—30.
South Carolina,	Columbia,	November 8—11.
Tennessee,	Nashville,	October 5—7.
Vermont,	Burlington,	September 13—16.
Wisconsin,	Milwaukie,	September 26—30.

Butter Making.

Messrs. L. Tucker & Son—Seeing in your valuable paper the Country Gentleman considerable said about butter, I thought I would give a statement of my way of making it, for the benefit of your readers.

The milk stands about 36 hours, then skim and churn; then I draw off the milk and wash the butter in 3 or 4 waters, as it needs; then the butter and salt is weighed separately; three fourths of an ounce of salt to one pound of butter is then mixed with the hands, the same as you knead bread, until properly mixed, and then packed. I used to work the milk out, but found that I could make better butter by washing. Some say there is specks of dried milk in their butter; but there is no such thing as dried milk in butter—it is cream that lays next to the milk. It is never found in the cellar, but in the milk room when the air is too dry.

I always drain my butter-milk through a sieve in the spring, until I put it down cellar. I have churned from what is called white caps, from six to eight pounds of butter; but the best way is to put the dried cream with your next cream as you skim, which gives it a chance to soak To make good butter there must be care, and a good place to set your milk, and good water and feed for your cows. The best feed for butter is old pasture. I have a pasture that has been in pasture 30 years, and I always make my samples from this.

If health permits, I shall be at the State Fair with two samples, and ready for any question about butter that may be asked. Ira Brown. *South Rutland, Jef. Co., N. Y.*

Western Fruits.

The rapid growth made by trees in summer, and the occasional intense cold of winter, throughout the great region of the west, renders it a matter of great importance to ascertain the hardiest varieties, or such as are best adapted to the climate. We have occasionally published lists furnished by the most intelligent cultivators in the western States, with a view to supply all the valuable information we can for our western readers. Having recently had some correspondence with several western fruit raisers on this subject, we furnish some extracts which we know will be acceptable to all those in search of information in relation to hardy fruits.

ADNAH WILLIAMS, of Galesburg, Ill., remarks--"On account of the diversity of soil in our State, arises a great difference of opinion among pomologists as to what varieties to cultivate For instance, one says, "Rambo, all killed;" another "not injured"—*both state facts*. One has been grown under such conditions as to ripen its wood, and is not injured by the variations of temperature or severe cold; the other has been under such other conditions that the wood is immature, soft, not ripe, and the effect of cold or vicissitudes, is death. The object to be attained on *our* prairie soil, (prairie soils vary greatly,) is RIPENED WOOD. How shall that be attained, is the question. The conditions under which a single cherry tree (Black Tartarian) has been grown on my place, are such that that tree is alive, but all others of that class (Heart or Bigarreau) are dead. Thousands of Northern Spy in nursery rows ('55 and '56) were killed to the ground; while other trees of the same variety in rows not one rod distant were uninjured; the only difference, the wood of one lot was ripened; the other unripe. Such soft wooded varieties as Baldwin, R Russett, Bullock's Pippin, &c., cannot well be grown here; their natural habit cannot be so much changed as to make it an object, even if there were no other objections."

He adds the following list of apples recommended by the Horticultural Society of that place, for general prairie cultivation: Early Harvest, Carolina Red June, Early Pennock, (culinary,) Summer Pearmain, Maiden's Blush, Rambo, Fameuse, Roman Stem, Yellow Bellflower, Jonathan, Tallman Sweeting, Wine Sap, Rawles' Janet, and Willow Twig.

The following list (which is very similar) is furnished by J. S. SHERMAN, of Rockford, Ill.:—*Summer*—Early Harvest, Carolina Red June, Hocking, Red Astrachan, Summer Queen, Sweet June. *Autumn*—Autumn Swaar, Haskell Sweeting, Fameuse. *Winter*—Bellflower, Canada Reinette, Golden Russet, Red Romanite, Rawles' Janet, Winesap.

O. P. ROGERS, (of the firm of Rogers, Woodward & Glass, Nurserymen,) of Marengo, Ill., says, "Of the *hardy* varieties tested by me, are Red Astrachans Red June, Sweet June, Benoni, Early Joe, St. Lawrence, Lowell, Fameuse, Tallman Sweeting, Jersey Black, Winesap, Yellow Bellflower, Golden Russet, Belmont, Swaar, Jonathan, and Westfield Seeknofurther. Of those *decidedly tender*, Rambo, Sweet Bough, Baldwin, Keswick Codlin, Domine, Jersey Sweet, and Green Sweet. Many of our fruit men preferred the English Golden with English Russet and Bullock" Pippin. The two latter are tender, the former quite hardy."

D COOK, of Jackson, Michigan, says: "The following varieties are found to be among the most hardy throughout this section, viz., Northern Spy, Yellow Bellflower, Goldent Russet, (not Am.,) Tallman Sweet, Benoni, Red Astrachan, and Willow Twig.

J. T. LITTLE, of Dixon, Illinois: "Wilson's Albany Strawberry promises finely; I had splendid berries on plants set out last spring; flavor not equal to that of McAvoy's Superior. Jenny's Seedling is remarkably productive; Hovey's unprofitable. Our principal crop is the Necked Pine, which does all we would ask plants to do."

A Large Pear Orchard.

The Rural New-Yorker gives an account of an extensive young orchard of standard pears, containing forty-five acres planted with nearly 5,000 trees, now in its second year of growth. It was planted by STARKS & MATTISON, of Monroe Co., N. Y., on a strong, fertile clay loam. The ground was prepared by subsoiling 18 inches deep, and the trees were planted twenty feet apart. Not a dozen out of the whole number have died. Winter mulching has been used for protecting the trees, consisting of yard manure, and a mound of earth around each tree, the manure being spread and spaded in the following spring, and the mound levelled. Every tree is staked, and the trunk of each from the ground to the branches, is covered with a loose cotton case to protect the bark from the heat of the sun. Many are making a growth of three or four feet this summer, and some are already bearing moderately. Among the sorts planted are 1,300 Virgalieu, 1,000 Bartlett, 370 Winkfield, 300 Diel, 300 Lawrence, 270 Seckel, 230 Louise Bonne of Jersey, 220 Flemish Beauty, aad smaller numbers of Sheldon, Rostiezer, Easter Beurre, Onondaga, Glout Morceau, Winter Nelis, &c.

Strawberries on Clay Grounds.

MESSRS. EDITORS—I would like very much to have you give a little specific, plain direction how to proceed in the culture of the strawberry on clayey land that is very much inclined to be wet. Please begin with the very first steps, and proceed regularly up to cropping time, and please state the adaptability of clay ground to the cultivation of the strawberry, and oblige L. F. DILLAWAY. *Troy, Ohio.*

We have had some experience in planting strawberries on the kind of land alluded to. It is possible that such hardy sorts as the Large Early Scarlet and Wilson's Albany may succeed and bear on such soil as it now is, with a proper addition of manure. It would however, be far more certain of success, and the crops would be far better, if the same course was adopted that we pursued in our own experiment, namely, to underdrain thoroughly, and then to reduce the stiffness of the soil by carting on sand. A coating of two or three inches of sand, worked into the soil, effects a great improvement; and, unlike the application of manure, it remains for ages. After having brought the land to this excellent condition, set out the strawberry plants, (young plants, produced by runners the previous year,) in rows 20 inches apart, and 10 or 12 inches in the row. Keep them clean and well cultivated, like beans, and they will bear some the first year, and profusely the second, *if the best sorts are used.* If field culture is intended, set the rows two and a half or three feet apart, and cultivate with a horse.

Notes for the Month.

"An Editor's Farm."—Under this head we see transferred to the last *Rural New-Yorker*, from an anonymous correspondent of a Yates county paper, a most disreputable attack upon our friend and associate John J. Thomas of Union Springs, Cayuga county, evidently intended to throw discredit upon Mr. Thomas as an agricultural writer, by representing him as a thriftless and unsuccessful farmer; and the editor of the Rural, we regret to see, endeavors to give additional force to the slander by some appended remarks in which exultation at the opportunity of copying so delicious a morsel, is far more transparent than the wit under which it is attempted to be concealed. To those who know Mr. Thomas, or who have visited his beautiful place at Union Springs, no refutation of the charge brought against him is necessary, but for the satisfaction of others we publish the following statement from some of Mr. T.'s neighbors:

J. J. Thomas's Farm.—A very erroneous statement having lately appeared in the Rural New-Yorker, in relation to the farm now occupied by our fellow-citizen J. J. Thomas, with a view to detract from his reputation as a successful cultivator as well as writer, we hereby certify that the statement alluded to is entirely false, and that his residence is one of the most beautiful in this part of the country, and his farm a very neat and productive one, in a high state of cultivation; and that during the short time he has occupied it, it has undergone great improvements, among which are some miles of tile-draining.

H. H. Farley, Laban Hoskins,
Edward Eldridge, Wm. H. Chase.
Union Springs, August 5, 1859.

Rye Turning to Chess.—L. F. Scott of Bethlem, Ct., relates to us a case of rye turning to chess, as he believes; or if it is not thus transmuted, he wishes us to tell him where the chess came from. That chess comes from the seed of chess, is in accordance with the immutable laws of creation, a law which has never yet been abrogated by the sleight of man. But for us, up in New-York, to undertake to say where the weeds on every man's farm down in Connecticut, came from, would require rather more knowledge than even an "editor" is generally expected to possess. There are many ways in which the introduction of the seed might easily be accounted for, which we have repeatedly mentioned on former occasions. The case mentioned by our correspondent, where "simon-pure crook-neck squashes" gradually turned into "pumpkin squashes," is very different, the squash and pumpkin being scarcely distinct species, remarkable for the readiness with which they hybridize; but rye and chess are distinct genera, and were never known and never can hybridize, much less make a clean leap from one to the other.

Ditching Machine.—We have previously stated in our columns, that the Illinois Central R. R. Co had offered a premium of one thousand dollars for the best steam plow, in addition to that of three thousand dollars by the Illinois State Ag. Society; and we now learn from a circular received from F. W. Biddle, Secretary, that at a meeting of the Executive Committee of the Illinois Central R. R. Co., held at Chicago, July 28, the following resolution was adopted:

Resolved, That the Illinois Central Railroad Company offer $500 for the best Ditching Machine for open ditching. The simplicity and economy of its construction, and its application to farm uses, must be such that it can successfully compete with manual labor;—the award to be made by the Executive Committee of the State Agricultural Society, in connection with three scientific machinists to be selected by that body. Before any party shall claim payment of said award, he shall exhibit the practical working of the machine at the same places and times with the Steam Plow which shall receive the award from the same Committee—the Illinois Central Railroad Company agreeing to transport said machine to and from such points free of expense to the owner.

Freak of Lightning.—The Cooperstown (Otsego Co., N. Y.,) Freeman's Journal of 28th July, contains the account of lightning striking an entire hop-yard, which consisted of three and a half acres of ground, destroying it at one flash. The vines of the yard are supported by strings attached to wires that run from posts on each side, and these are connected by cross wires, so that when the electric discharge fell upon a corner post, which it shivered, it ran over every wire, and down nearly all of the posts, as well as down many of the strings, and the climbing vines; in some instances tearing the roots out of the ground, and tearing from the seventy-eight posts that held the wires, a wagon load of kindling wood. The striking was witnessed by a woman, who distinctly saw the flash as it came down upon the first post, and flashed zig-zag across the plot on the wires. She describes it as a magnificent though terrific sight.

From Canada to California.—We learn that F. W. Stone, Esq., of Guelph, C. W., a well-known breeder of improved stock, has lately sold and sent to Albert Dibblee, Esq., San Francisco, California, ten pure Cotswold rams and six Cotswold ewes, five South-Down rams and three South-Down ewes, and one improved Leicester ram.

M. A. Cuming.—We notice the recent death of this able and experienced Veterinary Surgeon at St. Johns, N. B. He has contributed many valuable papers to various agricultural publications, and his loss will be severely felt in his own vicinity, and to the agricultural community. The Secretary of the Maine Board of Agriculture, writing to the Maine Farmer in regard to his death, says: "I consider his death a public loss, having rarely ever met a man of such extensive and thorough acquirement in his profession and all matters kindred to it. He was an accurate chemist, and was thoroughly at home in all matters pertaining to the theory and practice of Agriculture, and at the same time the plainest and most unassuming of men."

State Fair.—We learn that the work of preparing the ground on the Troy road, near this city, for the forthcoming State Fair, is progressing rapidly. Thirty of the fifty acres to be included in the grounds, are already fenced, and the buildings are being erected The land is also thoroughly drained. Hon. John A. Dix is to deliver the annual address; and meetings for the discussion of Agricultural topics, will be held in the Lecture Room of the Society every evening during the Fair.

The "Early May Wheat" of the present harvest is a greater success than ever. Cutting began June 12th, and this wheat was ground into flour on the 29th June; and some of our farmers who cultivated the common varieties, fed their men on bread from this wheat, whilst engaged in cutting the later ripening sorts. All varieties have done well here this year, except a part of the blue stem white, which proves to be under the lawful weight, sixty pounds. "The Early May" weighs, this year, sixty-four pounds to the bushel. For the information of all your readers north, who are addressing me through the mail daily, I will say this wheat can be purchased here in any quantities, just at the market price for any other good wheat. My own crop is sold and ground into flour, at $1.10 per bushel, and since wheat has fallen at Maysville, Ky., to $1. It is not likely to go any lower, as any thing under $1 checks sales. Supplies can be secured at from $1 to $1.10 per bushel, and two and a-half bushel sacks at 32 cts. each Maysville is on the Ohio river, with fine shipping facilities to any part of the union. I will receive orders *gratuitously*, and the only extra cost will be a shipping or forwarding fee of three cents per bushel, at Maysville. I have shipped several lots to Ohio and Pennsylvania, through the house of Messrs. Mitchell & Jenkins, of that city. Anthony Killgore.
Fernleaf, Ky.

MEDITERRANEAN WHEAT.—I send you by express, a sample of my Mediterranean wheat, cleaned for seed. I think it the best of that kind of wheat I ever saw. will you please hand over the greater portion of it to my friend Col. JOHNSON, and tell him I hope he will put it in a handsome glass dish, and place it in the State Agricultural Rooms, with a card in it, telling where raised, and let it remain there until he gets a better sample sent him, *but no longer*. JOHN JOHNSTON. *Near Geneva*

A portion of this beautiful sample of wheat has been deposited in the State Agricultural Rooms, and the other portion remains at our office. Those who wish to see a beautiful sample of this variety of wheat are invited to call at either place.

SOULES WHEAT.—There is a wonderful call for Soules wheat for seed. I suppose the farmers think the midges are all dead, but let me tell them they are neither dead nor have they *deserted*. The wheat came too early in ear for them this year. I have sent seed to Indiana, Kentucky, Pennsylvania, New-Jersey, and Connecticut, and to several in our own State, and my neighbors. JOHN JOHNSTON.

WHEAT MIDGE NOT DESTROYED BY FROST.—We frequently see the statement, or hear the remark, that the wheat midge was probably destroyed by the great frost. An observing farmer tells us that he never saw this insect more abundant than the present year, but that the wheat was in too forward a state to be injured by their attacks.

THREE ROWS OF POTATOES.—An acquaintance at Pakenham showed us in his garden in July, three rows of potatoes. Row number one, with the smallest and shortest tops, was from a single eye gouged out. Row number two, which stood next—with better tops than number one—was from pieces cut, a single eye to each piece. Row number three, which had the longest and heaviest tops, and best growth, was from pieces cut in the usual way, with a number of eyes to each piece. All were healthy and doing well. We hope to hear how the crop will yield in weight when dug. Appearances decidedly favored number three. W. O. B.

☞ Mr. N. H. NOYES of Otisco, Onondaga Co., we learn has purchased 200 acres of our friend JOHN JOHNSON'S farm in Seneca county.

KILLING BARK LICE.—O. P. ROGERS, of Marengo, Illinois, says: "I use for wash to kill bark lice, one gallon soft soap, half a gallon of lye or water, heat to boiling, and add three-fourths of a pint of spirits of turpentine. Put on while warm with a paint brush."

ENGLISH BEANS FOR FEEDING STOCK.—Col B. P. JOHNSON, in a brief notice of a call on Mr. WAINWRIGHT of Dutchess Co., in the Society's *Journal*, says that Mr. W. has been raising English beans for feeding. His crop last year was successful, and this year it promises a very gratifying yield. If further experiment proves this product suited to our climate, we would second the recommendation to our farmers, "to give attention to this crop, as it is a valuable one, and may be found very useful in rotation."

SOUTHWESTERN MISSOURI.—This is a fine stock country, and land is cheap, offering fine inducements to emigrants This is one of the best corn countries in the Mississippi Valley, with fine water—springs almost every where—with about an equal proportion of prairie and timber land. Coal, and that of the finest kind, such as pure cannel, as well as bituminous, in abundance. The soil is a black rich loam. Fruit succeeds here finely. Vines of every kind grow here in the most bountiful manner. This is the watermelon's seeming nativity; they are seen some falls in the sod land until long after frost; after the corn has been cut off the land, they seem to be so thick one could walk on them partly over the field, and so large you would not care to carry one of the largest far. J. A. P. *Morgan Co, Mo.*

APPLE-PIE MELON, &c.—By what method shall I tell when the Apple-pie Melon is ripe or fit for use—also the "Chufas ?" or earth almond. O. L. D.

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Lizzie,	American Herd Book,	Volume	2,	page	447
Juno,	do	do	2,	do	417
Lucretia,	do	do	3,	do	514
Rouge,	do	do	3,	do	642
Maud,	do	do	4,	do	463

Also, several Bull Calves of much merit.

Apply at Ellerslie Farm, one mile south of Rhinebeck Station, Hudson River Railroad.

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Aug. 11—w6t. Oct. 6—w1t.

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Between Broadway and Greenwich St, north river side of city. **Remember No. 54 Vesey Street.**
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Which is the "Neplus Ultra" of Mills,

For grinding feed of all kinds, also for flouring. It is portable, and will grind with an ordinary Two Horse Power, from *five to seven bushels of feed per hour perfectly.*

It is called "Lyon's & Phillips' Patent," and is warranted to work satisfactorily, or it can be returned at our expense. It is no humbug, but a "Simon pure article;" and every Farmer and Miller that uses it will certify that it is just the article represented.

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March 10, 1859—w&m9ms

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Contents of this Number.

Annual Register for 1860.

The sixth number of this work is in press, and we wish now to say a word to our advertising friends. The num- of pages devoted to advertisements being somewhat limited, many applications have each year reached us too late for insertion, and it is on this account, as well as in order that the work may be completed as early as practicable, that those who wish for space in this department should send in their advertisements immediately. Prices as in previous numbers: One page, twenty dollars; one-half page, twelve dollars; one-third page, eight dollars; business cards from one to five dollars. Advertisements will be handsomely displayed, according to the room they are expected to occupy.